DOCUMENT RESUME

ED 063 971 PS 005 452

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TITLE	Structure and Development of Personal-Social Behaviors in Preschool Settings. ETS Head Start Longitudinal Study.
INSTITUTION	Educational Testing Service, Princeton, N.J.
SPONS AGENCY	Office of Child Development (DHEW), Washington, D.C.
REPORT NO	PR-71-20
PUB DATE	Nov 71
GRANT	OEG-H-8256
NOTE	223p.
EDRS PRICE	MF-$0.65 HC-$9.87
DESCRIPTORS	Black Community; *Classroom Observation Techniques; *Cognitive Development; Cognitive Measurement; Correlation; Economically Disadvantaged; *Measurement Techniques; Personal Growth; Sex Differences; *Social Development; *Socioeconomic Influences
IDENTIFIERS	Bipolar Scale; Project Head Start; Unipolar Scale

ABSTRACT

As part of an ongoing longitudinal study of early cognitive, affective, and social development in economically disadvantaged children, this investigation assessed the classroom behavior of 500 urban preschool children from Portland, Oregon, St. Louis, Missouri, and Trenton, New Jersey. The majority were black and enrolled in Head Start. Primary aims were to find the structure of classroom behavior, examine similarities and differences in structure among subgroups and test (mean) differences among subgroups on measures of personal-social constructs. The instruments used in the system of measurement were the Bipolar and Unipolar Scales and the Manual of Scale Definitions. Major topics reviewed in detail are: Method; Structural Analyses: Procedure; Structural Findings; Further Results of the Fall(1) X Spring Samples; Results of the Fall(1) X Fall(2) Sample; Construct Correlates of Masculine-Feminine and Dependent-Independent; Components of Adult and Child Orientation; and Conclusions. Fifty-three references are cited. Summarized in 29 tables is a breakdown of samples of construct- and component measures according to age, sex, and period of observation (Spring or Fall). Appendixes A through H include the rating forms used in the analysis and data gathered using the Bipolar and Unipolar Scales. (Author/LS)

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STRUCTURE AND DEVELOPMENT OF PERSONAL-SOCIAL BEHAVIORS IN PRESCHOOL SETTINGS

Walter Emmerich

ETS-Head Start Longitudinal Study

Report under Grant Number H 8256

Prepared for: Project Head Start
Office of Child Development
U. S. Department of Health,
Education, and Welfare

November 1971

EDUCATIONAL TESTING SERVICE
PRINCETON, NEW JERSEY

PS 005452

ACKNOWLEDGMENTS

This investigation was part of a larger longitudinal study under the direction of Scarvia B. Anderson and Virginia C. Shipman (Educational Testing Service, 1968, 1969, 1970). The writer wishes to express his appreciation to the staff of the larger study for their help in carrying out this investigation.

I am deeply grateful to Gita Wilder for her thoughtful and dedicated assistance in developing the rating instrument and procedures. Mrs. Wilder also trained the trainer-supervisors, and, with Patricia L. Casserly, monitored field operations and supervised protocol editing.

This study would not have been possible without the sustained efforts and skills of field personnel. I wish to express my gratitude to our trainer-supervisors, Geraldine Auel in Portland, Oregon, Marie Hall and Arthur Littleton in St. Louis, Missouri, and Laura Engler in Trenton, New Jersey.

Our special thanks go to the women in each site whose ratings constituted the data for this study.

For their splendid cooperation, we wish to thank the preschool teaching and administrative staffs of the following organizations: Archdiocese of Portland, Berean Baptist Church, St. Phillips Cooperative, St. Vincent DePaul Society, and Westminster Presbyterian Church, all of Portland, Oregon; Archdiocesan School System, Grace Hill Settlement House, Human Development Corporation, and Project Head Start, all of St. Louis, Missouri; Carolyn Stokes Day Nursery, Mercer Street Friends Center, Our Lady of the Divine Shepherd Cultural Center, and Trenton Board of Education, all of Trenton, New Jersey.

A study of this scope creates special problems for data processing, and I wish to thank Richard J. Martz for solving them and carrying out this phase of the study.

I am indebted to Dorothy T. Thayer for her statistical advice and work.

Frank Capell's sustained interest and assistance greatly facilitated the structural analyses and preparation of this report.

The writer wishes to express his special appreciation to Virginia C. Shipman for her counsel and support throughout the course of this study.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS . . . . i-ii

INTRODUCTION. 1

METHOD. 2-15

Instrument 2
Measurement Procedure. 4
Selection of Study Sites and Programs. 6
Measurement Plan and Design. 7
Samples. 8
Data Collection Personnel. 12
Selection of Raters. 12
Training 13
Implementation and Monitoring of Data Collection 14
Interrater Reliabilities 15

STRUCTURAL ANALYSES: PROCEDURE 16-24

Initial Analyses 16
Further Analyses 16
Derivation of Construct Measures 19
Analyses of Construct Measures 24

STRUCTURAL FINDINGS 24-40

Circumplex Ordering. 24
Cue Utilization. 28
Third Dimension. 28
Discussion 36
A Structural-Developmental Model 38

FURTHER RESULTS FOR THE FALL$_1$ X SPRING SAMPLE 40-56

Sex X Age X Period Interactions. 43
Sex X Age Interaction. 43
Sex X Period Interaction 45
Age X Period Interaction 45
Age Main Effects 45
Period Main Effects. 45
Sex Main Effects 48
Individual Stabilities Within Subgroups. 49
Developmental Transformations. 49
Theoretical Implications 55

RESULTS FOR THE FALL$_1$ X FALL$_2$ SAMPLE. 56-63

Mean Differences 56
Stabilities and Predictabilities 60

TABLE OF CONTENTS (Cont'd)

Page

CONSTRUCT CORRELATES OF MASCULINE-FEMININE AND DEPENDENT-INDEPENDENT. 63-69

Masculine-Feminine 64
Dependent-Independent. 69

COMPONENTS OF ADULT AND CHILD ORIENTATION 69-84

Measures 69
Base Rate Frequencies. 72
Locations of Components Within the Structure 72
Mean Differences Among Subgroups 78
Developmental Transformations. 79

CONCLUSIONS 84-94

Organization of the Personal-Social Domain 84
Structural-Developmental Model 86
Methodological Implications. 87
Implications for Educational Programs. 88
System of Personal-Social Measurement. 90
Implications for Future Studies. 93

REFERENCES. 95-100

APPENDICES. 101-218

A. Rating Format. 101-105

B. Manual of Scale Definitions and Examples 106-138

C. Rater Recruitment Forms. 139-142

D. Training and Procedure Manual. 143-154

E. Median Interrater Reliabilities for Sites and Observation Periods. 155-162

F. Intercorrelations Among 18 Construct Measures Within Sex-Age-Period (Fall_1 X Spring) Subgroups. 163-171

G. Scale Correlations with the 18 Construct Measures Within Sex-Age-Period (Fall_1 X Spring) Subgroups. 172-207

H. Adult and Child Component Correlations with the 18 Construct Measures Within Sex-Age-Period (Fall_1 X Spring) Subgroups. 208-218

Introduction

This is part of an ongoing longitudinal study of early cognitive, affective, and social development in economically disadvantaged children (Educational Testing Service, 1968, 1969, 1970). The present investigation assessed the classroom behaviors of over 500 urban children, the majority of whom were black and enrolled in Head Start. Primary aims of the study were to find the structure of classroom behaviors (intercorrelation patterns), to examine similarities and differences in structure among certain subgroups, and to test (mean) differences among subgroups on measures of personal-social constructs.

Little was known about the organization and development of personal-social behaviors in young disadvantaged children. Consequently, there was interest in the dimensionality of individual differences in this sample as compared to previous research on predominantly white middle class samples. A related question was whether the dimensionality of personal-social behaviors is subject to sex differences and/or developmental change within the preschool period. Attention also was given to evaluating mean differences due to sex of child, age of entry into a program, length of time in a program, and their interactions. In addition to extending our general understanding of personal-social development, it was hoped these findings would suggest possible ways that Head Start and related early "compensatory" educational programs might become more effective. Finally, it was expected that the findings on structure and mean differences among groups would provide an integrated network of partially validated personal-social constructs in the classroom setting, laying the foundation for future analyses of relationships between these constructs and antecedent, concurrent, and subsequent processes measured in the larger longitudinal study.

Method

Instrument

Following a taxonomic analysis of the personal-social domain (Emmerich, 1968b), a rating instrument applicable to preschool settings was developed and piloted under field conditions (Emmerich & Wilder, 1969). The instrument consists of 21 Bipolar Scales, 127 Unipolar Scales, and a Manual of Unipolar Scale Definitions and Examples (Appendixes A and B). The Bipolar Scales assess broad personality dimensions described in the literature (Becker & Krug, 1964; Bronson, 1966; Digman, 1965; Emmerich, 1968b; Kagan & Moss, 1962; Schaefer, 1961; Schaefer & Bayley, 1963; Walker, 1967). Despite some overlap in their meaning, this rather large number of general dimensions was included to help clarify the structure of the personal-social domain at its more abstract levels (Coan, 1964; Emmerich, 1968a,b). The Unipolar Scales assess more specific categories of behavior, including social motives (e.g., Aggression), coping mechanisms (e.g., Ignores Frustration), and activities or interests (e.g., Gross Motor Behavior). Some definitions included in the Manual were taken or modified from previous research, especially in the case of social motives (Beller, 1948, 1955; Emmerich, 1964, 1966. 1968b; Heathers, 1955; Maccoby & Masters, 1970; Martin, 1964; Sears, Rau, & Alpert, 1965).

Recent analyses of social motives reveal that behaviors often assumed to be components of constructs may in fact be uncorrelated or differently correlated depending upon such factors as sex and age (Emmerich, 1964, 1966, 1968a; Hartup, 1963; Maccoby & Masters, 1970; Sears, Rau, & Alpert, 1965). Therefore, certain components were included as separate scales in the present instrument. Moreover, in line with recent theorizing on the differentiation and development of child-adult and child-child subsystems of behavior (e.g., Emmerich, Goldman, & Shore, 1971; Maccoby & Masters, 1970), identical behavioral contents (e.g., Seeking Physical Proximity) sometimes were included in two scales, one defined with an adult as the object (recipient) of the subject's behavior, and the other with a child as the social object.

Each Bipolar Scale contained seven points and called for a judgment on the relative strengths of the attributes defining each pole. Each Unipolar Scale called for an estimate of a behavior's frequency of occurrence during a specified period of observation, based upon the following four-point scale: (0): totally absent; (1): occurred once; (2): occurred more than once, but not continuously; (3): continuous during the observation period.

There were important advantages to including both Bipolar and Unipolar Scales in the same system of measurement. This strategy provided empirical links between the more global dimensions of personality and specific behavioral cues. Bipolar Scales were not explicitly defined by the Manual, but judges were instructed to rate a given child on the Unipolar Scales immediately prior to rating the child on the Bipolar Scales, and to use information contained in the Unipolar Ratings when making Bipolar judgments. Thus, correlations between these two types of scales indicate which behavioral cues (Unipolar Scale Definitions) were utilized by judges in arriving at each Bipolar Rating. Also, insofar as there emerged different patterns of Unipolar correlates among Bipolar Scales, variance shared by Bipolar Scales could not be attributed solely to a "halo" effect.

A thorough understanding of a developmental process requires temporal comparisons of means and correlational patterns (Emmerich, 1969a; Wohlwill, 1970). The present Unipolar Scales employed "quasi-absolute" measurement, presumed to be more sensitive to mean changes in development than relative judgments on Bipolar Scales (Emmerich, 1969a). However, it was believed that sensitivity to mean shifts could be achieved even in the case of the Bipolar Scales by encouraging judges to use their Unipolar Scale Ratings on each subject as behavioral cues when forming judgments on the Bipolar Scales.

Measurement Procedure

The procedure for rating a child typically was as follows. A pair of raters simultaneously observed the target child continuously for 25-30 minutes during a "free play" period when adults in the classroom minimally structured the child's activities. Immediately after this observation period the two observers left the classroom, went to a relatively secluded location, and independently rated the child on the complete set of Unipolar and Bipolar Scales. These rating protocols were preserved and used to estimate inter-rater reliabilities. After completing their independent ratings, the two raters discussed those scales on which their ratings disagreed, with the aim of arriving at a complete set of consensus ratings. The consensus ratings defined a "single observation" on the child, constituting the basic unit of measurement.

Deviations from the above procedures were kept to a minimum, but exceptions were inevitable in a field study of this size and complexity. The more important exceptions were as follows. (a) At times only one observer was present to observe and rate a child in a classroom at a designated time. (b) When a class program included relatively few or short "free play" periods, judges observed two subjects consecutively prior to recording ratings on either of them. (c) If a class program included no obvious "free play" periods, the least structured period in the program was accepted as a substitute. (d) Occasionally, when scheduling was exceptionally tight and could not be readjusted, observers were allowed to base their ratings on observation periods that were shorter than 25 minutes. In fact, the shortest observation period was 19 minutes and the modal length was 30 minutes.

The above procedure obviously represents only one of many potential ways of applying the instrument. From a theoretical standpoint, perhaps the most important requirement was to observe and rate the child at a time when he is relatively free of adult control and formal teaching; otherwise, ratings might reflect almost exclusively behaviors elicited by teacher-specific and/or program-specific determinants. The present approach was not altogether free of such determinants, of course, nor was it intended to be, but several studies cited earlier indicated that "free play" school contexts do elicit reliable individual differences at this age.

PS 005452

Our greatest question was whether a single observation period would suffice to sample behaviors measured by the scales. For some subjects it was possible to secure a second observation within the Fall as described later in detail. However, a minimum of three and perhaps more repetitions of the rating procedure probably would be required to achieve a total scale score having reasonably high individual stability over time. While the resources of the present study could not support such an effort, the unusually large number of subjects and measures from the present instrument partially compensated for more stable individual scale scores. For example, it was not necessary to achieve high individual stability over time in order to compare subgroups with regard to their intercorrelation patterns or mean levels.

Since interjudge reliabilities typically are estimated from subsamples, perhaps the most unusual feature of the present measurement system was reliance upon simultaneous paired observations throughout the study. This procedure was adopted for two major reasons. First, because the judgmental task was so complex, and because of the many ways that anticipated field conditions might attenuate reliabilities, it was concluded that almost any substudy designed to estimate interjudge reliabilities would have been unrepresentative in one or more important respects, thereby lacking clear generalizability to the full sample. Secondly, preliminary work (Emmerich & Wilder, 1969) had suggested that (a) motivation to do the observation-rating task well is enhanced when raters work in pairs, and (b) the process of arriving at consensus ratings provides continuous self-correcting feedback in the application of scale definitions.

Selection of Study Sites and Programs

The present sample overlaps considerably with that of the larger longitudinal study, described elsewhere in detail (Educational Testing Service, 1970). Major criteria for selecting sites were that they should be "poverty" areas in different regions of the continental United States. Selection criteria for subjects were that they should be living in areas served by year-long Head Start programs feeding into primary schools cooperating in the larger study, and should be eligible for first grade, on the basis of birthdate, in the Fall of 1971. The large majority of children were from families in which the father (and/or mother) held a blue collar job.

The present classroom ratings were collected in Portland, Oregon, St. Louis, Missouri, and Trenton, New Jersey during the 1969-70 academic year. An attempt was made to rate all children included in the larger longitudinal study who were enrolled in a preschool or day-care center during 1969-70. In addition, ratings were made on the other children in a classroom if 60% or more of the children in that classroom (80% in St. Louis) were included in the larger longitudinal study. The present sample included children eligible for first grade in the Fall of 1971 on the basis of age plus those children within one month of such eligibility.

Measurement Plan and Design

Originally it was planned to secure at least four sets of (consensus) ratings on each subject, distributed such that two would occur close together (within two weeks) in the Fall (F_1 and F_2), while two would occur close together in the Spring (S_1 and S_2). It was also hoped that subjects could be observed relatively early in the Fall and relatively late in the Spring, thereby maximizing the time interval between Fall and Spring ratings. An attempt was also made to observe children within roughly the same time period among the several sites, so that amount of time in program and site would not be confounded. If these conditions had held, site differences could have been ignored for present purposes, $F_1 \times F_2$ and $S_1 \times S_2$ comparisons would have provided (lower-bound) individual stability estimates, and $F_1 + F_2 \times S_1 + S_2$ comparisons would have defined the "amount of time in program" variable as well as providing information on individual stability over a longer time span.

In fact, however, it was possible to collect two observations in the Fall only, and only in Portland and Trenton. Also, Fall observations continued into the Winter, especially in St. Louis where they did not commence until December, and Spring observations commenced in late Winter. Moreover, it was not always possible to rate the same children both in the Fall and Spring.

The original design was divided into two parts, with overlap of subjects between them. In the first design, subjects having both Fall_1 and Spring ratings were selected from all three sites. These data were amenable to subgrouping on the basis of sex, age at entry into a program (Younger Vs. Older), and semester (Fall_1 Vs. Spring). In the second design, subjects having both a Fall_1 and Fall_2 observation in Portland and Trenton were selected. In addition to providing Fall_1 X Fall_2 lower-bound estimates of short-term stability, the Fall_1 X Fall_2 data were amenable to subgroupings on the basis of sex, age at entry into a program, and period of observation during the Fall (Early Vs. Late).

Samples

The Fall_1 X Spring sample consisted of 596 children from all three sites, and the Fall_1 X Fall_2 sample included 415 children from Portland and Trenton only. In these overlapping samples children classified as "Younger" ranged in age from 47 to 55 months (Means = 51.9 and 51.8, respectively) at the time of the Fall_1 observation, and children classified as "Older" ranged in age from 56 to 64 months (Means = 58.6 and 57.9, respectively) at the time of the Fall_1 observation.

The Fall ratings commenced in October 1969, and continued through January 1970. Spring ratings commenced in late February 1970, and continued until the middle of June 1970. The mean time interval between the Fall and Spring ratings for the $Fall_1$ X Spring sample was 133 days (S.D. = 28).

Table 1 presents a breakdown of the $Fall_1$ X Spring sample according to sex and age at entry into the program (Younger Vs. Older). Entries in this table represent cell sizes for subsequent correlational analyses and Analyses of Variance. Since this sample was constituted longitudinally to include subjects having both $Fall_1$ and Spring ratings, corresponding cell sizes for the Fall and Spring periods are identical. Table 2 presents a breakdown of this sample according to site and race.

Table 3 presents a breakdown of the $Fall_1$ X $Fall_2$ sample according to sex, age at entry into program, and period within the Fall Semester when the $Fall_1$ observation occurred (Early Vs. Late). An attempt was made to collect $Fall_1$ and $Fall_2$ ratings on the same children with no fewer than four and no more than 13 days apart. In fact, 94% of this sample was rated a second time within two weeks; the mean interval was 9.2 days (S.D. = 5.9). Classification according to period was determined from the number of days between September 1, 1969 and the child's $Fall_1$ rating. For the Early group, this interval ranged from 50 to 80 days, with a mean of 64 days (S.D. = 10). For the Late group, this interval ranged from 83 to 151 days, with a mean of 113 days (S.D. = 22). Again, entries in Table 3 represent cell sizes for subsequent correlational analyses and Analyses of Variance. (Disproportionate cells in Table 3 are due to the built-in association between period and child age.) Since all subjects in this sample were rated twice in the Fall, corresponding cells for the $Fall_1$ and $Fall_2$ ratings are identical. Table 4 presents a breakdown of this sample according to site and race.

Table 1

Fall$_1$ X Spring Subsample Sizes

	Boys	Girls	Sexes Combined
Younger	169	150	319
Older	140	137	277
Ages Combined	309	287	596

Table 2

Fall$_1$ X Spring Sample Classified by Site and Race

	Black	White	Races Combined
Portland	212	67	279
St. Louis	131	54	185
Trenton	124	8	132
Sites Combined	467	129	596

Table 3

Fall$_1$ X Fall$_2$ Subsample Sizes

	Boys			Girls			Sexes Combined		
	Younger	Older	Ages Combined	Younger	Older	Ages Combined	Younger	Older	Ages Combined
Early	72	37	109	61	36	97	133	73	206
Late	48	62	110	45	54	99	93	116	209
Periods Combined	120	99	219	106	90	196	226	189	415

Table 4

Fall$_1$ X Fall$_2$ Sample Classified by Site and Race

	Black	White	Races Combined
Portland	211	63	274
Trenton	133	8	141
Sites Combined	344	71	415

Data Collection Personnel

A trainer-supervisor of raters was hired for the academic year in each site on the basis of the quality of her previous supervisory work in the larger study or similar positions. This person worked under the supervision of a local professional technical director for the larger study. Primary functions of trainer-supervisors were to become thoroughly competent in using the instrument, to train raters in local sites, to set up and manage local operations, to maintain quality control in data collection, and to keep close liaison with the Princeton Office.

The actual raters were women from the local cities, often living in the communities under study. While there were no minimal educational requirements, the typical rater had completed high school. Many had considerable experience with their own or other young children, had worked previously on other aspects of the larger study, and/or worked subsequently on other aspects of the larger study.

Selection of Raters

Raters were first selected as trainees. At the completion of training, those trainees meeting acceptable standards of performance were selected for the actual study. The first step was a brief interview to find out if the candidate would be available when needed throughout the academic year. Applicants also completed a paper-and-pencil instrument asking for examples of different kinds of behavior in children, such as Dependency and Aggression (Appendix C). This instrument was used to screen out persons obviously lacking verbal skills required for the rating task. Decisions on hiring at both this and the second phase of selection were made by the author in collaboration with the trainer-supervisor and professional staff of the larger study. Applicants accepted at this first stage were informed that they must meet the professional staff's standards of performance by the end of the designated training period in order to be hired as raters.

Most of the trainees qualified as raters. Decisions were based upon the trainee's ability to work well with others and to apply the instrument effectively. Competence at the rating task was judged in part by inspecting bivariate distributions of agreements across the 148 scales for paired independent raters on at least one and often more than one child. While it would have been unrealistic to expect many raters to meet very high absolute standards of agreement, it was quite evident when a trainee was not likely to achieve even a moderately high agreement level.

Training

Trainer-supervisors participated in a two-week intensive training course in Princeton during September, 1969. They were thoroughly trained in use of the instrument in much the same way that they were later to train raters in the local sites. They were also instructed at this time on the measurement plan for the year and procedures for implementing this plan in the field. Details on these procedures are found in the Training and Procedure Manual (Appendix D).

Rater training in local sites consisted of a minimum of eight full working days of intensive training in use of the instrument under field conditions. Training was conducted by the trainer-supervisor in collaboration with the local technical director and Princeton staff. Basic features of this training, detailed in the Training and Procedure Manual, can be summarized as follows: (a) The trainer reviewed the Manual of scale definitions with the group of trainees, emphasizing concrete behavioral examples in young children. (b) Trainees observed children under actual study conditions, took notes on their behavior, matched behaviors to scales, and discussed these matches in group discussions with the trainer. (c) Raters paired off to observe and rate children, followed by corrective feedback from each other and the trainer.

Implementation and Monitoring of Data Collection

Local operations were supervised from a central office in each site where the supervisor maintained a master schedule for assigning raters to classrooms and subjects. Flexible scheduling was required to deal efficiently with day-to-day changes in field conditions, although no feature of scheduling is known to have introduced systematic bias into the rating procedure.

The training process was continued throughout the course of the study. Whenever feasible, rater pairs held their last consensus discussion of the day at the central office where the trainer-supervisor was available to help resolve any questions that might arise. Such supervision from the trainer was mandatory at least once a week. Bivariate distributions of the paired independent ratings were continually monitored by local and Princeton staffs.

For estimating interjudge reliabilities, it was desirable that specific pairs simultaneously and independently rate a reasonably large number of subjects. On the other hand, reassignments of certain pairs sometimes enhanced morale and quality of performance, and so pair reassignments were allowed whenever data quality was at issue.

When a subject was observed and rated a second time in the Fall, different pairs of raters were assigned to the Fall_1 and Fall_2 ratings of that subject. Assignment of different raters to subjects seen both in the Fall and Spring was not attempted, and it seems doubtful that Spring ratings were influenced by recall of the same children in the Fall.

Interrater Reliabilities

Pearson correlations were computed on all scales for rater pairs who observed at least 20 children simultaneously within the same period (Fall or Spring). These interrater reliability estimates are reported for each site and period in Appendix E. For the 21 Bipolar Scales as a set, the median of the medians across pairs, sites, and periods was .63. For the 127 Unipolar Scales as a set, this overall median was .74.

While generally satisfactory for present purposes, reliability estimates sometimes varied considerably among pairs within sites, and differed somewhat among sites and between periods (see Appendix E). These variations in measurement accuracy may have attenuated the present findings, but it seems unlikely that they introduced systematic bias. Taking into account the careful attention given to training and to monitoring of data collection, it would appear unrealistic to expect dramatic improvements in the present instrument's overall accuracy when applied under conditions approaching the complexity of this study. In this regard, it remains an open question whether the paraprofessional raters generally were any less (or more) accurate than college or graduate students or other professional groups.

Structural Analyses: Procedure

Initial Analyses

The purpose of the structural analyses was to reduce the original set of 148 scales to a subset which was (a) representative of major dimensions underlying the total set of scales, and (b) reasonably invariant in structure across subgroups. Once such a "continuous" structure had been isolated, we could proceed to examine the meanings of constructs within the overall structure, short- and long-term stabilities, and mean differences among subgroups. Also, by comparing scales which were reasonably invariant in structure with those which were not, we hoped to be able to discern possible "discontinuities" in structural development (Emmerich, 1968a).

Initial inspection of the intercorrelations for several Bipolar Scales in a subsample indicated an ordering resembling the well-known circumplex model of personal-social behavior (Baumrind & Black, 1967; Becker & Krug, 1964; Foa, 1961; Lorr & McNair, 1965; Schaefer, 1961; Schaefer & Bayley, 1963). Application of the Guttman-Lingoes Smallest Space Analysis (SSA) (Guttman, 1968; Lingoes, 1965; Roskam & Lingoes, 1970) to the Fall_1 X Spring Sample confirmed the presence of a circumplex ordering of most Bipolar Scales that was highly similar among the four sex-period groups (Boys-Fall, Boys-Spring, Girls-Fall, Girls-Spring).

Further Analyses

In subsequent analyses, SSA programs were applied to the Fall_1 X Spring Sample to detect ordered patterns in larger correlation matrices which included both the Bipolar and Unipolar Scales. These analyses helped determine which

Unipolar Scales, if any, (a) were located on or near the circumplex, (b) were in a different location but on or close to the rough plane defined by the circumplex, or (c) defined a third dimension perpendicular to the circumplex plane. In effect, then, we were interested in the location of Unipolar Scales relative to the circumplex ordering within a three-space defined by the SSA. Of course, if in these larger matrices the circumplex ordering no longer held, this fact would be revealed by the SSA. Moreover, so that the final structural solution might be reasonably invariant across subgroups, each step in the analysis was carried out separately on the four sex-period subgroups.

Prior to these analyses, the following preliminary steps were taken. First, since Bipolar Scales were undefined in the Manual, it was important to know if the interpretation of these scales by raters differed among the sites. It was reasoned that a Bipolar Scale would have the same meaning across sites to the extent that its pattern of correlations with all other Bipolar Scales remained invariant across sites. Each Bipolar Scale's correlations with the others were computed for each of the four sex-period subgroups within each of the three sites. Site variations were inspected and any striking changes in correlation pattern were noted. On this basis, Bipolar Scale No. 17 (Academically Motivated Vs. Otherwise Motivated) and No. 20 (Rigid Vs. Flexible) were eliminated. Secondly, because the Bipolar Scales provided a reasonably good match with the circumplex model, especially that of Becker and Krug (1964), certain scales were reflected (reversed) in order to provide a closer match with this model and to distribute Bipolar Scales more evenly around the circle. Third, since five of the Unipolar Scales (Nos. 38, 40, 64, 110, 123) had zero variability in at least one of the four sex-period subgroups, these scales were eliminated. Fourth, four Unipolar Scales (Nos. 26, 44, 56, 101) were dropped because their correlations with no other scale included in Analysis Series B (see below) reached at least $|.30|$ in at least one of the four sex-period subgroups.

There were several series of analyses, each consisting of SSA three-space solutions within each of the four sex-period subgroups. Ideally we would have wanted to include all Bipolar and Unipolar Scales in the first series, but the available SSA programs could not handle this number of variables. Consequently, Series A and B were needed to place all Unipolar Scales into the same space as the Bipolar Scales. Series A included the 19 Bipolar Scales plus the 59 Unipolar Scales which had at least one Bipolar Scale correlate $\geq |.30|$. Two important outcomes of Series A were that the circumplex order was preserved and a third dimension emerged, although its meaning was not clear. Series B included 19 Bipolar Scales, 22 Unipolar Scales that were extended out on the third vector most consistently in Series A, and the remaining 59 Unipolar Scales excluded from Series A. The outcome of Series B was essentially the same as Series A. Series C and D reduced the number of scales without essentially altering the structure. Series C included 18 Bipolar Scales (No. 2, Masculine-Feminine, was excluded) plus 44 Unipolar Scales consistently extended out on the third vector in Series A and B. Series D included 18 Bipolar Scales plus 17 Unipolar Scales consistently extended out on the third vector in Series C.

The above analyses provided reasonably clear answers to several important structural questions. First, the initial circumplex proved to be very robust despite the addition of Unipolar Scales. Secondly, while not rigorously tested, the analyses gave little reason to doubt that three SSA dimensions accounted for the major orderings of scale intercorrelations. Finally, reasonably similar structures emerged across the four sex-period groups.

Derivation of Construct Measures

The next step was to derive construct measures, and, in the process, to clarify the third dimension's meaning, which had remained elusive throughout the above series of analyses. Our strategy was to derive measures for several constructs which were located at different places on the third dimension, and then to interpret this dimension's meaning from a final series of SSA analyses that included these derived scores.

Three polarities appeared as possible definers of the third dimension at one or more points in Series A-D. The first contrasted Autonomous Achievement (Beller, 1948, 1955; Crandall, 1963; Emmerich, 1966; Martin, 1964) with the more directly "social" constructs on the circumplex. A composite score for Autonomous Achievement was derived by summing the seven appropriate Unipolar Scales listed in Table 5. Also, a (positive) social orientation toward adults seemed to characterize one pole, while such an orientation toward children seemed to characterize the other pole (Heathers, 1955; Maccoby & Masters, 1970; Marshall & McCandless, 1957; McCandless, Bilous, & Bennett, 1961; Moore & Updegraff, 1964). A composite score for Adult Orientation was derived from the sum of 14 Unipolar Scales which specify that an adult is the recipient of the subject's behavior (Table 5). A composite score for Child Orientation was derived from the sum of 14 Unipolar Scales specifying another child as the social object (Table 5). Since these two constructs included corresponding scales having identical contents (e.g., Nos. 1 and 2), they differed only with regard to social object. Finally, there was a contrast between gross motor and fantasy ("make believe") activities on the one hand, and activities involving fine manipulative, cognitive, or artistic behaviors on the other. These five distinct activity scales were kept intact (Table 5).

In order to further reduce the number of scales while achieving as close a match as possible with the 10-segment circumplex model of Becker and Krug (1964), certain Bipolar Scales were dropped (Nos. 9, 10, 14, 19) and others were summed to form composite measures (Table 5). The resulting 10 measures differed from the Becker and Krug model in two essential ways: (1) two aspects of the segment titled "Cooperative" were distinguished, the first emphasizing interpersonal behaviors, the second more impersonal behaviors; (2) the present Bipolar Scales did not adequately sample the "Emotional-Demanding" segment of the Becker and Krug model.

In summary, then, 40 Unipolar Scales were reduced to eight construct measures, each of which was of interest in its own right as well as being distributed along the third dimension. These measures, together with the 10 for the circumplex constructs, constituted the fully reduced set of 18 measures used in the final series of structural analyses that follows, as well as in later tests of mean differences among subgroups. In addition to listing the component scales for these measures, Table 5 provides median interrater reliabilities taken from Appendix E.

Table 5

Construct Measures Defining the Three-Space Structure

Construct Title[a]	Component Scale(s)[b]	Median Interrater Reliability[c]
1. Sociable	Social Vs. Solitary (BP 12)	.67
2. Loving	Happy Vs. Unhappy (BP 21)	.65
3. Cooperative-Interpersonal	Purposeful Vs. Aimless (BP 16)	.58
4. Cooperative-Impersonal	Constructive Vs. Destructive (BP 15)	.58
5. Calm-Compliant	Compliant Vs. Rebellious (BP 4)	.54
6. Submissive	Submissive Vs. Dominant (BP 8)	.65
7. Withdrawn	Withdrawn Vs. Involved (BP 1)	.70
	Restrained Vs. Expressive (BP 5)	.63
8. Distrusting	Tense Vs. Relaxed (BP 6)	.59
	Unstable Vs. Stable (BP 11)	.57
9. Defiant-Hostile	Vulnerable to Frustration Vs. Tolerates Frustration (BP 3)	.63
	Self-Centered Vs. Sensitive to Others (BP 7)	.58
	Aggressive Toward Others Vs. Affectionate Toward Others (BP 18)	.58
10. Assertive	Assertive, Bold Vs. Timid, Fearful (BP 13)	.63

Table 5 (Cont'd)

Construct Title[a]	Component Scale(s)[b]	Median Interrater[c] Reliability
11. Adult Orientation	Seeks Physical Affection (UP 1)	.93
	Seeks Help or Guidance (UP 3)	.73
	Seeks Physical Proximity (UP 5)	.83
	Seeks Attention - Positive Bid (UP 7)	.85
	Seeks Attention - Weak Bid (UP 11)	.77
	Seeks Praise or Approval (UP 13)	.85
	Seeks Evaluation (UP 15)	.94
	Conforms to Routine-Request (UP 27)	.68
	Friendly (UP 42)	.70
	Seeks Leadership (UP 48)	.45
	Seeks Information (UP 77)	.71
	Responsive to Teaching (UP 79)	.81
	Imitates (UP 81)	.68
	Attempts to Communicate Verbally (UP 84)	.84
12. Child Orientation	Seeks Physical Affection (UP 2)	1.00
	Seeks Help or Guidance (UP 4)	.87
	Seeks Physical Proximity (UP 6)	.72
	Seeks Attention - Positive Bid (UP 8)	.75
	Seeks Attention - Weak Bid (UP 12)	.72
	Seeks Praise or Approval (Up 14)	.84
	Seeks Evaluation (UP 16)	.70
	Conforms to Routine-Request (UP 28)	.66
	Friendly (UP 43)	.78
	Seeks Leadership (UP 49)	.94
	Seeks Information (UP 78)	.72
	Responsive to Teaching (UP 80)	.70
	Imitates (UP 82)	.71
	Attempts to Communicate Verbally (UP 85)	.85

Table 5 (Cont'd)

Construct Title[a]	Component Scale(s)[b]	Median Interrater[c] Reliability
13. Autonomous Achievement	Takes Initiative in Carrying Out Own Activity (UP 57)	.53
	Tries to Pursue Difficult Task (UP 58)	.74
	Exhibits Persistence (UP 60)	.61
	Completes Activity by Himself (UP 61)	.77
	Exhibits Goal-Directed Activity (UP 95)	.72
	Shows Planning in Pursuing Activity (UP 96)	.64
	Corrects or Modifies Performance to Meet Own Standard (UP 98)	.62
14. Cognitive Activity	Cognitive Activity (UP 53)	.83
15. Fine Manipulative Activity	Fine Manipulative Activity (UP 52)	.76
16. Artistic Activity	Artistic Activity (UP 55)	.87
17. Gross Motor Activity	Gross Motor Activity (UP 51)	.85
18. Fantasy Activity	Fantasy Activity (UP 54)	.85

[a] The first ten constructs correspond to the circumplex ordering of Becker & Krug (1964)

[b] Scale titles and numbers correspond to those of the Scale Form (Appendix A) and Manual (Appendix B).

[c] From Appendix E, Three-Site Total, Combined Fall & Spring.

Analyses of Construct Measures

The four sex-period subgroups were further subdivided according to the child's age at entry into the preschool program (Younger Vs. Older), thus creating eight sex-age-period subgroups. (This subdivision resulted in zero variability in one or more subgroups for Unipolar Scales 21, 34, 36, 67, 71, and 112.) In the final series of analyses, for which outcomes are reported below, the 18 construct measures were subjected to SSA within each of the eight subgroups.

One feature of the Smallest Space Analysis is that outcomes may be seen quite directly simply by rearranging portions of the original correlation matrix. In the spirit of "staying close to the data," actual SSA outputs will not be reported here; rather, relevant portions of the original correlation matrices will be presented.

Structural Findings

Intercorrelations among the 18 construct measures within each of the eight subgroups are given in Appendix F and are summarized in Tables 6-8, which present different sections of the matrix of mean correlations across the eight subgroups. Also noted in these tables are the number of subgroups in which a given correlation was statistically significant.

Circumplex Ordering

The circumplex ordering of the 10 Bipolar Scale constructs is readily seen in Table 6. (The locations of all other scales on the circumplex can be determined from inspection of Appendix G.)

Table 6

Mean Subgroup Intercorrelations for Circumplex

Ordered Construct Measures

Construct	No.	1	2	3	4	5	6	7	8	9	10
Sociable	1		.61	.32	.04	.03	-.23	-.66	-.46	-.11	.47
Loving	2	.61**		.45	.20	.12	-.20	-.70	-.59	-.22	.50
Cooperative-(Interpersonal)	3	.32*	.45**		.44	.07	-.18	-.56	-.46	-.10	.37
Cooperative (Impersonal)	4	.04	.20	.44**		.30	.12	-.17	-.35	-.34	.00
Compliant	5	.03	.12	.07	.30*		.43	.05	-.25	-.60	-.26
Submissive	6	-.23	-.20	-.18	.12	.43**		.36	.02	-.37	-.58
Withdrawn	7	-.66**	-.70**	-.56**	-.17	.05	.36**		.50	.04	-.59
Distrusting	8	-.46**	-.59**	-.46**	-.35**	-.25*	.02	.50**		.33	-.29
Defiant-Hostile	9	-.11	- 22*	-.10	-.34*	-.60**	-.37**	.04	.33*		.19
Assertive	10	.47**	.50**	.37**	.00	-.26*	-.58**	-.59**	-.29*	.19	

*p < .001 (two-tailed) in at least four out of eight subgroups.

**p < .001 (two-tailed) in at least seven out of eight subgroups.

Table 7

Mean Subgroup Intercorrelations on Task Vs.

Person Orientation Measures

Construct	No.	11	13	14	15	16	12	17	18
Adult Orientation	11								
Autonomous Achievement	13	.30*							
Cognitive Activity	14	.29*	.26						
Fine Manipulative Activity	15	.20	.40**	.23					
Artistic Activity	16	.26	.20	.06	.06				
Child Orientation	12	.09	.19	.09	-.03	-.02			
Gross Motor Behavior	17	.02	-.02	-.08	-.29*	-.06	.29*		
Fantasy Activity	18	-.02	.06	-.07	-.13	-.09	.37**	.19	

*$p < .001$ (two-tailed) in at least four out of eight subgroups.

**$p < .001$ (two-tailed) in at least seven out of eight subgroups.

Table 8

Mean Subgroup Correlations Between the Circumplex and

Task Versus Person Orientation Measures

		Circumplex									
		Sociable	Loving	Coop.-Int.	Coop.-Imp.	Compliant	Submissive	Withdrawn	Distrusting	Defiant-Hostile	Assertive
Task Orientation	No.	1	2	3	4	5	6	7	8	9	10
Adult Orientation	11	.11	.18	.07	.06	.08	-.11	-.21	.04	-.07	.19
Autonomous Achievement	13	.00	.17	$.35^{**}$	$.36^{*}$	.03	-.09	-.18	-.10	-.14	.20
Cognitive Activity	14	.00	.09	.07	.13	.05	-.12	-.08	.05	-.05	.09
Fine Manipulative Act.	15	-.12	.00	.10	.27	.07	.02	-.01	.05	-.08	-.01
Artistic Activity	16	.02	.05	.10	.13	.01	-.06	-.07	-.04	.00	.10
Person Orientation											
Child Orientation	12	$.51^{**}$	$.39^{**}$	.19	.05	.06	-.15	$-.42^{**}$	-.19	-.17	$.31^{*}$
Gross Motor Behavior	17	$.31^{*}$	$.21^{*}$	.09	-.15	-.09	-.14	$-.28^{*}$	-.14	.05	.23
Fantasy Activity	18	$.28^{*}$	$.23^{*}$	.15	-.03	-.08	-.22	$-.33^{*}$	-.10	.01	.25

$^{*}p < .001$ (two-tailed) in at least four out of eight subgroups.

$^{**}p < .001$ (two-tailed) in at least seven out of eight subgroups.

Cue Utilization

The pattern of Unipolar Scale correlates for each Bipolar Scale indicates how specific behavioral cues were utilized by raters in arriving at Bipolar Scale judgments. Since Bipolar Scales were applied in defining the circumplex, these cue patterns are useful for identifying constituent behaviors underlying the 10 circumplex constructs. For illustrative purposes two adjacent constructs on the circumplex, Sociable and Loving, are compared in Table 9. The two sets of cues overlapped considerably, as expected from the close proximity of Sociable and Loving in the structure. On the other hand the rank orderings of critical cues differed, indicating underlying distinctiveness of meaning. Thus, the circumplex ordering of constructs cannot be attributed primarily to "halo" effects; i.e., to associational processes in raters which merely link one global trait to another. Moreover, these findings suggest that requiring raters to go through the process of first judging construct-related behavioral cues is an important if not critical step in arriving at highly useful global ratings of the type embodied in the present Bipolar Scales.

Third Dimension

As seen in Table 7, there were two major clusters of measures on the third dimension, the first consisting of Adult Orientation, Autonomous Achievement, Cognitive Activity, Fine Manipulative Activity, and Artistic Activity. The second cluster consisted of Child Orientation, Gross Motor Behavior, and Fantasy Activity.

With regard to the meaning of this polarity, it will be noted, first of all, that the second cluster was more "saturated" with social content than the first. To illustrate, when engaging in Cognitive or Fine Manipulative Activity,

Table 9

Unipolar Correlates of Sociable and Loving,

Averaged Across Subgroups

No.	Unipolar Scale	Sociable		Loving	
		$\bar{r}$	Rank	$\bar{r}$	Rank
43	Friendly toward other child	.53	1	.40	3
85	Attempts to communicate verbally to other child	.50	2	.36	4
50	Smiles and/or laughs	.42	3	.46	1
31	Engages in complementary behavior	.39	4	.28	6
88	Verbally loud	.37	5	.29	5
8	Seeks attention from child - positive bid	.36	6	.27	7
46	Exhibits leadership	.30	7	.24	8
62	Gets intrinsic satisfaction from activity or task	.28	8	.43	2

Note:--Listed are Unipolar Scale correlates having a mean correlation across subgroups $\geq |.30|$ with either construct.

the child typically will direct his attention to the task itself, thus at least temporarily removing himself from social stimulation, whereas for Gross Motor or Fantasy Activity, two or more children are more likely to engage jointly in a common activity accompanied by social interaction. As seen in Table 8, the second cluster measures were located close to Sociable on the circumplex, whereas measures from the first cluster tended to be more "distant" from the circumplex. Of the 400 correlations between the 10 circumplex measures and the five Task Orientation measures in all eight subgroups, only 27 or 7% were statistically significant ($\underline{p} < .001$, two-tailed). On the other hand, of the 240 correlations between the 10 circumplex measures and the three Person Orientation measures, 70 or 29% met this significance criterion.

Of course, children high on the first cluster measures also interacted socially, but the topography of their social behaviors appeared to be quite different. Such children were more likely to be located nearer the Cooperative sectors of the circumplex (Table 8), and to interact with adults rather than with peers (Table 7).

This contrast between the two clusters is well illustrated by another kind of comparison. The Unipolar Scale of Engages in Parallel Activity (U.P. 32), having an average interrater reliability index of .67 (Appendix E), was defined as follows: "Child engages in same activity as other who is nearby, but (their) activity is independent, with no mutual coordination" (Appendix B). The Unipolar Scale of Engages in Complementary Behavior (U.P. 31), having an average interrater reliability index of .77 (Appendix E), was defined as follows: "Child coordinates his own activity to supplement and facilitate a common activity shared by one or more others. Genuinely cooperative activity" (Appendix B). The difference between these two scale definitions is essentially the same as that noted above with regard to the two clusters on the third dimension. Table 10 presents correlations of the two scales with each of the 18 construct measures, averaged across subgroups. The expected differential patterning of correlates was strikingly clear. Engages in Parallel Activity was positively associated with the first cluster, unassociated with the second cluster, and minimally associated with the circumplex, whereas Engages in Complementary Behavior was unassociated with the first cluster, positively associated with the second cluster, and located near Sociable on the circumplex.

These findings together with the fact that Adult and Child Orientation constructs were orthogonal suggest that the topography of adult-oriented behaviors will include more task-related communications than that for child-oriented behavior. It will be recalled that Adult and Child Orientation measures were derived from identical Unipolar Scales differing only in social object (Table 5). However, the relative contributions of corresponding scales to each total score could still differ, as revealed from part-whole correlations. Table 11 presents the part-whole correlations and their rank orders for the derived Adult and Child Orientation measures, averaged across the eight subgroups.

The same scales of Attempts to Communicate Verbally, Seeks Attention Through Positive Bid, and Friendly, received the top three ranks within both constructs, signifying a common core of sociality underlying both Adult and Child Orientation. However, if one considers in Table 11 those component scales which shifted three or more ranks, then differences in topography

Table 10

Mean Construct Correlations Across Subgroups for Engages in Parallel Activity and Engages in Complementary Behavior

Construct	No.	Parallel Activity (U.P.32)	Complementary Behavior (U.P.31)
Sociable	1	.03	.39**
Loving	2	.06	.28*
Cooperative-Interpersonal	3	.10	.19*
Cooperative-Impersonal	4	.20	-.01
Compliant	5	.03	.06
Submissive	6	.03	-.13
Withdrawn	7	-.06	-.35**
Distrusting	8	-.05	-.19
Defiant-Hostile	9	-.07	-.04
Assertive	10	.09	.20
Adult Orientation	11	.21	-.07
Autonomous Achievement	13	.34**	.01
Cognitive Activity	14	.18	-.02
Fine Manipulative Activity	15	.33*	-.15
Artistic Activity	16	.25*	-.16
Child Orientation	12	.05	.40**
Gross Motor Activity	17	-.04	.29*
Fantasy Activity	18	-.12	.40**

* $p < .001$ (two-tailed), in at least four out of eight subgroups.

** $p < .001$ (two-tailed), in at least seven out of eight subgroups.

Table 11

Mean Part-Whole Correlations Across Subgroups

for Adult and Child Orientation Measures

Unipolar Scale	No. Ad.	 Ch.	Adult Orientation $\bar{r}$	 Rank	Child Orientation $\bar{r}$	 Rank
Attempts to Communicate Verbally	84	85	.75	1	.58	3
Seeks Attention - Positive Bid	7	8	.73	2	.63	2
Friendly	42	43	.72	3	.65	1
Seeks Information	77	78	.54	4	.46	7
Responsive to Teaching	79	80	.49	5.5	.23	11.5
Seeks Help or Guidance	3	4	.49	5.5	.28	10
Conforms to Routine-Request	27	28	.46	7.5	.53	5
Seeks Physical Proximity	5	6	.45	7.5	.54	4
Seeks Attention - Weak Bid	11	12	.42	9.5	.34	9
Seeks Praise or Approval	13	14	.42	9.5	.23	11.5
Seeks Physical Affection	1	2	.30	11	.22	13
Seeks Evaluation	15	16	.24	12	.17	14
Imitates	81	82	.21	13	.47	6
Seeks Leadership	48	49	.20	14	.36	8

become apparent. Seeks Information, Responsive to Teaching, and Seeks Help or Guidance all were ranked higher for Adult Orientation, as would be expected. Moreover, Seeks Physical Proximity, Imitates, and Seeks Leadership were ranked higher for the Child Orientation construct, suggesting that behaviors directed toward other children subordinated task-oriented responses to social goals. We shall return to this topographical question in a later section.

It is quite clear, then, that the first cluster represents autonomous achievement strivings in which social responses are subordinated to individualized, task-oriented goals. For convenience, this cluster henceforth will be referred to as "task-oriented." It is not surprising that task-oriented children direct their social behaviors more toward adults than toward peers, since adults are more competent in explaining task requirements, providing help, giving recognition for accomplishments, etc. (Honig, Caldwell, & Tannenbaum, 1970). Such children appear to be satellizers (Ausubel, 1957) who may be attempting to achieve standards of competency which they attribute to and value in adults (Emmerich, Goldman, & Shore, 1971; Kohlberg, 1969).

By contrast, the second cluster reflects affiliative tendencies toward peers in which task requirements and individual achievements are subordinated to interaction processes and goals. This cluster henceforth will be referred to as "person-oriented."

Interestingly, certain scales correlated positively with construct measures at both poles of the Task Vs. Person Orientation dimension. As seen in Table 12, these scales were: Smiles and/or Laughs, Gets Intrinsic Satisfaction from Activity, Recovers Quickly from Frustration or Threat,

Table 12

Mean Construct Correlations Across Subgroups for Scales Positively Correlated

Both with Task and Person Orientation Measures

	Construct Measure																	
Scale	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	12	17	18
Smiles and/or laughs (U.P.50)	.42	.46	.19	.01	.02	-.10	-.42	-.24	-.08	.27	.21	.10	.07	-.04	.01	.36	.23	.18
Gets intrinsic satisfaction from activity or task (U.P.62)	.28	.43	.33	.13	.01	-.18	-.46	-.30	-.10	.27	.18	.29	.05	-.02	.07	.31	.21	.28
Recovers quickly from frustration or threat (U.P.114)	.08	.09	.02	-.06	-.05	-.14	-.13	.03	-.06	.12	.21	.24	.13	.08	.04	.28	.14	.18
Ignores frustration or threat (U.P.125)	-.04	.04	.01	.08	.05	-.09	-.04	.07	-.16	.06	.12	.32	.14	.14	.00	.24	.07	.14
Active-Passive (B.P.9)	.50	.56	.52	.20	-.08	-.35	-.71	-.45	.00	.56	.17	.20	.06	.02	.06	.29	.31	.27
Energetic-Apathetic (B.P.10)	.55	.57	.39	.00	-.09	-.32	-.65	-.38	.03	.54	.13	.10	-.01	-.16	.04	.38	.55	.29

Ignores Frustration or Threat, Active Vs. Passive, and Energetic Vs. Apathetic. These scales also tended to be located closest to the construct of Loving on the circumplex. Evidently, the child who exhibits much positive affect, energy, and invulnerability to frustration also is quite capable of combining both task- and person-orientations.

These findings clarify the third dimension's location relative to the circumplex plane. Crossing the circumplex close to the construct, Loving, the task-orientation pole extends above the circumplex with its termination located between the two Cooperative constructs, while the person-orientation pole terminates directly below the circumplex close to the construct, Sociable.

Discussion

In summary, most of the Bipolar Scales and the majority of Unipolar Scales can be placed, with considerable invariance across the eight subgroups, into a three-space defined by the circumplex ordering of social constructs together with a third dimension of Task Versus Person Orientation.

Thus, the circumplex model clearly orders individual differences among preschool children from predominantly black lower class families. Since this model initially was formulated from samples which included many white middle class children (Becker & Krug, 1964; Schaefer, 1961), the present findings indicate its invariance across the races and socioeconomic levels, at least in young children.

Although less clear, previous research suggests that Task Vs. Person Orientation also is an important dimension of individual differences in middle class children. At the very least, the task-oriented pole of this dimension resembles the familiar constructs of autonomous achievement (Beller, 1948; Crandall, 1963), competence motivation (Kohlberg, 1969; White, 1959), intrinsic motivation (Hunt, 1965), and similar constructs often included in general multivariate models of personal-social behavior in children (Damarin & Cattell, 1968; Digman, 1965). For example, Emmerich (1964) found evidence for a three-dimensional structure in middle class preschoolers that was quite similar to that found here, although in the earlier study the task vs. person polarity (called Interpersonal Vs. Impersonal Orientation) was interpreted somewhat differently. However, most previous models have not singled out the present contrast between task-oriented and person-oriented patterns of behavior. Consequently, only further research can determine whether the exact placement of the third axis relative to the circumplex plane holds in other observation settings, at other age periods, and in middle class children at this age.

Specification of a dimension's meaning requires simultaneous consideration of both its internal properties and its pattern of relationships with other dimensions in the same domain. Considered in isolation, the correlations reported in Table 7 suggest that autonomous achievement striving in conjunction with task-oriented social responses directed toward adults generally is uncorrelated with participation in joint activities with peers. However, consideration of the locations of both of these poles in relation to the total structure indicates that the correlation between these two poles is moderated by the child's location on the circumplex. Obviously, the child who is Withdrawn or Distrusting can be neither task- nor person-oriented (Table 8). But it is also the case that the child who exhibits extremely outgoing behaviors on the circumplex (high activity level, resistance to frustration, expressions of positive affect, etc.) is also likely to exhibit both task- and person-oriented patterns of behavior (Table 12). In short, there is a curvilinear relationship between outgoingness and the tendency for children to become polarized on the dimension of Task Vs. Person Orientation, with maximal polarization occurring at a moderately high level of outgoingness.

A fuller understanding of the present structure depends upon further analyses of relationships between the 18 constructs and processes from other domains, including antecedent and concurrent influences. Such analyses should help clarify whether the present structure represents (1) no more than a description of the configuration of personal-social "states" at a given point in time, (2) stable individual differences in personality organization, (3) a dynamic model for predicting developmental change, and/or (4) differences in child behaviors associated with environmental variations. The analyses which follow bear on the first three of these interpretations, while the fourth will be investigated in future studies.

A Structural-Developmental Model

The present structure leads to the following speculations concerning a network of pathways or routes along which developmental change occurs at this age in the classroom context (Block, in press; Emmerich, 1968a; Van Den Daele, 1969). First, there is a general route shared by most children, extending from the "introverted" constructs of Submissive, Withdrawn, and Distrusting toward the "extroverted" constructs of Loving, Sociable, and Assertive. Children would be expected, of course, to vary in their rates of development along this pathway. Moreover, it would not be surprising if some children develop unevenly by moving back and forth on this dimension while sustaining a forward thrust over longer time spans, whereas other children may become "fixated" at some point or "regress" more or less permanently. Initial changes along this dimension seem to occur along one of two major routes around the circumplex, one via Compliant, the other via Defiant-Hostile. Other sets of pathways are introduced by Task Vs. Person Orientation. For example, children who are extremely task oriented also are likely to interact minimally with others, even with adults, whereas less extremely task-oriented children would exhibit many more task-related social responses directed toward adults. Also, children who are extremely person oriented may be so distracted by the flux of peer stimulation that they do not exhibit the more complex reciprocal and complementary interaction skills of less extremely person-oriented children. Moreover, it will be noted that different degrees of "freedom of movement" are associated with the child's "location" within the structure. The extremely introverted child can change in one of two directions, each around the circumplex. Also, the task-oriented child and the person-oriented child can "progress" only by becoming increasingly similar to each other. Between these two extremes there is maximization of the polarity between task and person orientation, and it is within this range that the greatest number of alternative pathways becomes available. Finally, as the child moves closer to the extroverted extreme, more routes on the circumplex itself become available. For example, a moderately task-oriented child could almost as easily follow the sequence of Cooperative-Assertive-Social-Loving as that of Cooperative-Loving.

A possible example of developmental change within this model is found in a previous study in which interpersonal-negative children became more poised over time (Emmerich, 1964), as if they had shifted in the present structure from Defiant-Hostile or Assertive to Sociable or Loving. Also, impersonal-positive children in the earlier study tended to become somewhat insecure over time, perhaps in a shift from extreme Task Orientation toward greater sociableness accompanied by initial difficulties in coping with the more assertive features of peer interactions.*

While many of these implications cannot be tested rigorously in the present study, they do provide a framework for the analyses which follow. For example, when evaluating mean differences attributable to sex, age at entry into a preschool program, and period of measurement (Fall_1 Vs. Spring), the 18 construct measures will be considered in terms of alternative pathways of change. Also, in the analyses of stability of individual differences, personality change will be explored by considering both traditional stability coefficients (within-construct correlations between Fall and Spring) and transformation coefficients; i.e., Fall-Spring correlations between constructs presumed to be adjacent along certain pathways, such as around the circumplex.

Further Results for the Fall_1 X Spring Sample

Table 13 reports cell means for the Sex X Age of Entry X Period (Fall_1 X Spring) breakdown, and Table 14 summarizes the Analysis of Variance for each of the 18 construct measures.

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*While suggestive, these comparisons do not constitute a demonstration of isomorphism between the structures found in the two studies.

Table 13

Sex X Age X Period (Fall$_1$ Vs. Spring) Subgroup Means

Construct	No.	Boys				Girls			
		Younger		Older		Younger		Older	
		Fall$_1$	Spring	Fall$_1$	Spring	Fall$_1$	Spring	Fall$_1$	Spring
Sociable	1	4.72	4.89	4.79	4.93	4.58	4.74	4.85	4.82
Loving	2	5.04	5.04	5.16	5.13	5.00	4.99	5.20	4.99
Cooperative-Interpersonal	3	4.79	4.82	4.91	4.89	4.80	5.05	5.12	4.92
Cooperative-Impersonal	4	4.61	4.79	4.65	4.70	4.75	5.05	5.00	4.93
Compliant	5	4.47	4.49	4.41	4.53	4.39	4.56	4.65	4.53
Submissive	6	3.92	3.86	3.73	3.71	3.89	3.85	3.76	3.74
Withdrawn	7	5.73	5.75	5.59	5.61	6.10	5.66	5.72	5.75
Distrusting	8	6.67	6.72	6.40	6.55	6.85	6.56	6.36	6.40
Defiant-Hostile	9	11.50	11.44	11.67	11.53	11.61	11.76	11.31	11.47
Assertive	10	4.45	4.51	4.65	4.62	4.30	4.59	4.39	4.57
Adult Orientation	11	6.66	6.95	6.21	6.53	6.71	7.41	6.39	7.57
Autonomous Achievement	13	4.86	5.05	5.06	4.61	4.79	5.92	5.58	5.09
Cognitive Activity	14	.37	.39	.49	.55	.53	.64	.63	.75
Fine Manipulative Activity	15	1.12	1.13	1.07	1.22	1.27	1.24	1.28	1.22
Artistic Activity	16	.75	.66	.65	.57	.80	.83	.74	.74
Child Orientation	12	6.20	6.99	5.93	7.69	5.50	6.64	5.85	6.89
Gross Motor Activity	17	1.18	1.20	1.23	1.27	.64	.83	.79	.93
Fantasy Activity	18	1.09	1.00	1.23	1.17	.87	.94	.93	.91

Table 14

Summaries of Analyses of Variance: Sex X Age X Period (Fall$_1$ Vs. Spring)

Construct	No.	F Values						
		Sex X Age X Period^a	Sex X Age^a	Sex X Period^b	Age X Period^b	Sex^b	Age^b	Period^c
Sociable	1	.57	.60	.74	1.15	1.53	2.36	5.23*
Loving	2	.85	.00	1.11	1.54	.86	3.42	1.86
Cooperative-Interpersonal	3	4.83*	.00	.08	7.51**	4.87*	3.07	.11
Cooperative-Impersonal	4	2.24	.73	.00	9.08**	23.90***	.13	8.12**
Compliant	5	4.06*	1.45	.11	.76	1.19	.79	.98
Submissive	6	.00	.17	.00	.14	.01	5.65*	.49
Withdrawn	7	2.01	.00	1.88	1.68	1.55	1.54	1.13
Distrusting	8	.48	.29	1.95	1.80	.19	7.42**	.01
Defiant-Hostile	9	.05	4.13*	1.81	.02	.01	.44	.05
Assertive	10	.01	.93	5.47*	1.24	2.60	2.91	6.93**
Adult Orientation	11	.31	.37	2.41	.38	2.22	.89	8.72**
Autonomous Achievement	13	1.44	.06	1.33	7.41**	4.57*	.13	.22
Cognitive Activity	14	.01	.13	.95	.09	16.07***	7.26**	3.50
Fine Manipulative Activity	15	.71	.05	1.69	.45	4.44*	.02	.17
Artistic Activity	16	.04	.06	1.39	.01	5.56*	2.57	.89
Child Orientation	12	2.52	.04	.25	2.03	5.16*	1.43	48.62***
Gross Motor Activity	17	.09	.30	1.99	.01	55.97***	2.69	3.88*
Fantasy Activity	18	.38	1.40	.89	.06	12.10***	2.39	.27

$^a df_1 = 1,\ df_2 = 592$ $\quad ^{*}\underline{p} < .05$

$^b df_1 = 1,\ df_2 = 593$ $\quad ^{**}\underline{p} < .01$

$^c df_1 = 1,\ df_2 = 595$ $\quad ^{***}\underline{p} < .001$

Sex X Age X Period Interactions

A Sex X Age X Period Interaction was present for that sector of the circumplex which included Cooperative-Interpersonal ($\underline{p} < .05$), Cooperative-Impersonal (n.s.), and Compliant ($\underline{p} < .05$). As seen in Figure 1, these behaviors increased only slightly in boys between the Fall and Spring, whereas they increased considerably between these periods in Younger Girls and decreased in Older Girls. It would appear, then, that cooperativeness and compliance develop more rapidly in girls than in boys during this period. However, the presence of opposite developmental trends in Younger and Older Girls suggests these behaviors represent phases or milestones in development rather than endpoints resulting in enduring sex differences.

It is also noteworthy that constructs opposite to these three measures on the circumplex, such as Distrusting and Defiant-Hostile, did not exhibit the converse pattern, indicating that bipolar social behaviors are not necessarily under the control of the same developmental processes.

Sex X Age Interaction

Older Boys were more Defiant-Hostile than Younger Boys, whereas Younger Girls were more Defiant-Hostile than Older Girls ($\underline{p} < .05$). Perhaps behaviors associated with this construct serve different functions in the sexes at this age. Their greater presence in Older than in Younger Boys could be part of a developing masculine orientation, whereas the opposite pattern in girls might reflect greater vulnerability to social frustration and threat in younger, presumably less socially mature girls.

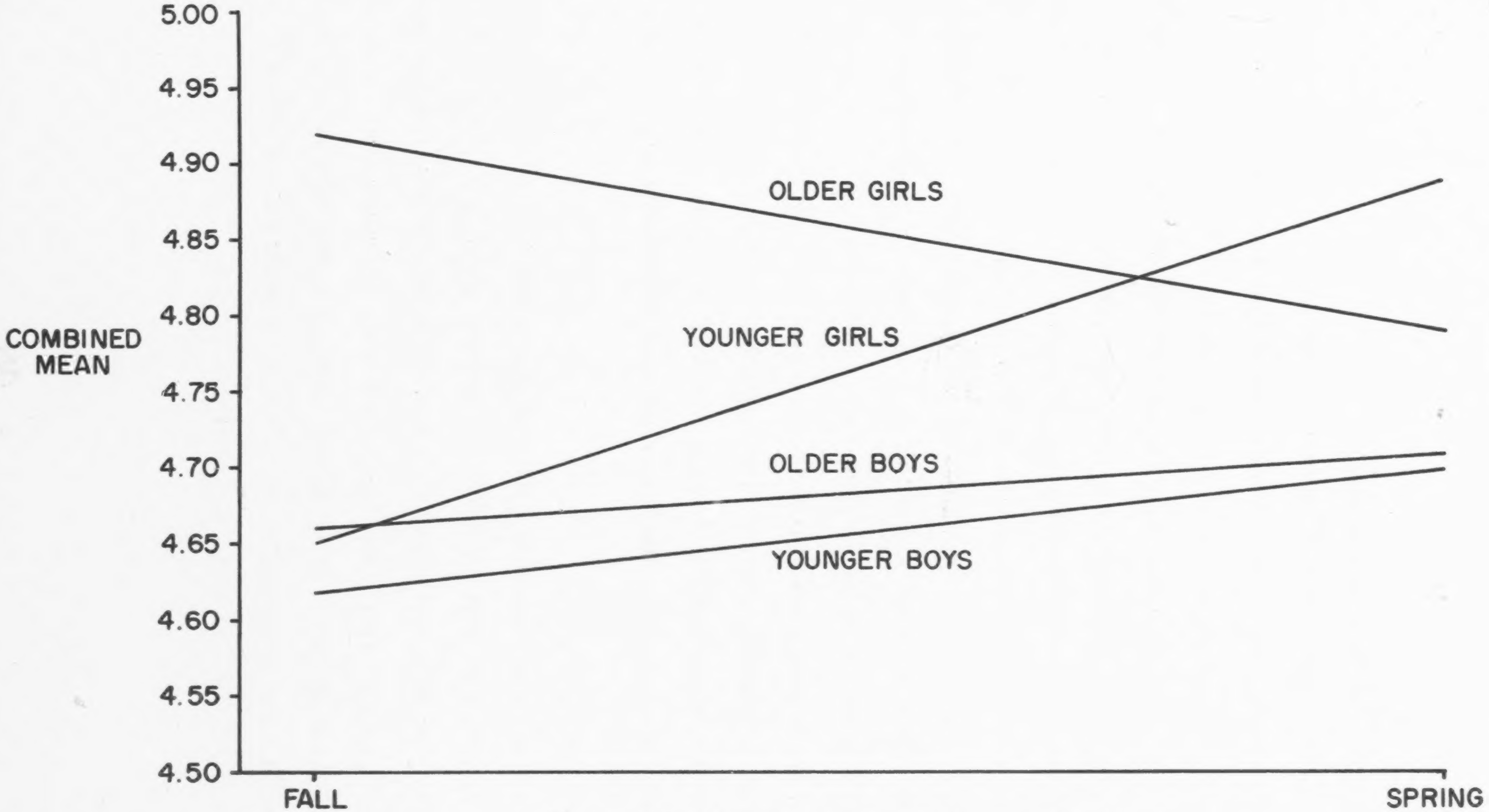

Fig. 1. Development of Cooperativeness-Compliance.

Sex X Period Interaction

As seen in Figure 2, girls but not boys became increasingly Assertive between the Fall and Spring ($p < .05$). This finding suggests that Younger Girls are developing interpersonal skills which help reduce the occurrence of social frustration and/or which modulate their responses to it. Other implications of this finding are discussed later.

Age X Period Interaction

Figure 3 indicates that younger children increased in Autonomous Achievement from Fall to Spring, whereas older children decreased in this behavior between these periods ($p < .01$). This pattern is similar to that already noted for constructs denoting cooperativeness and compliance, at least in girls, suggesting again that a developmental increase in certain behaviors may be followed by decreases at a higher level of maturity.

Age Main Effects

A common age difference was present for that sector of the circumplex which included Submissive ($p < .05$), Withdrawn (n.s.), and Distrusting ($p < .01$). These behaviors decreased with age, as would be predicted from the present structural-developmental model, although the developmental shift for Withdrawn was not significant. Older children also engaged in more Cognitive Activity than Younger children ($p < .01$).

Period Main Effects

Subjects were more Sociable ($p < .05$), more adult-oriented ($p < .01$), more child-oriented ($p < .001$), and engaged in more Gross Motor Activity

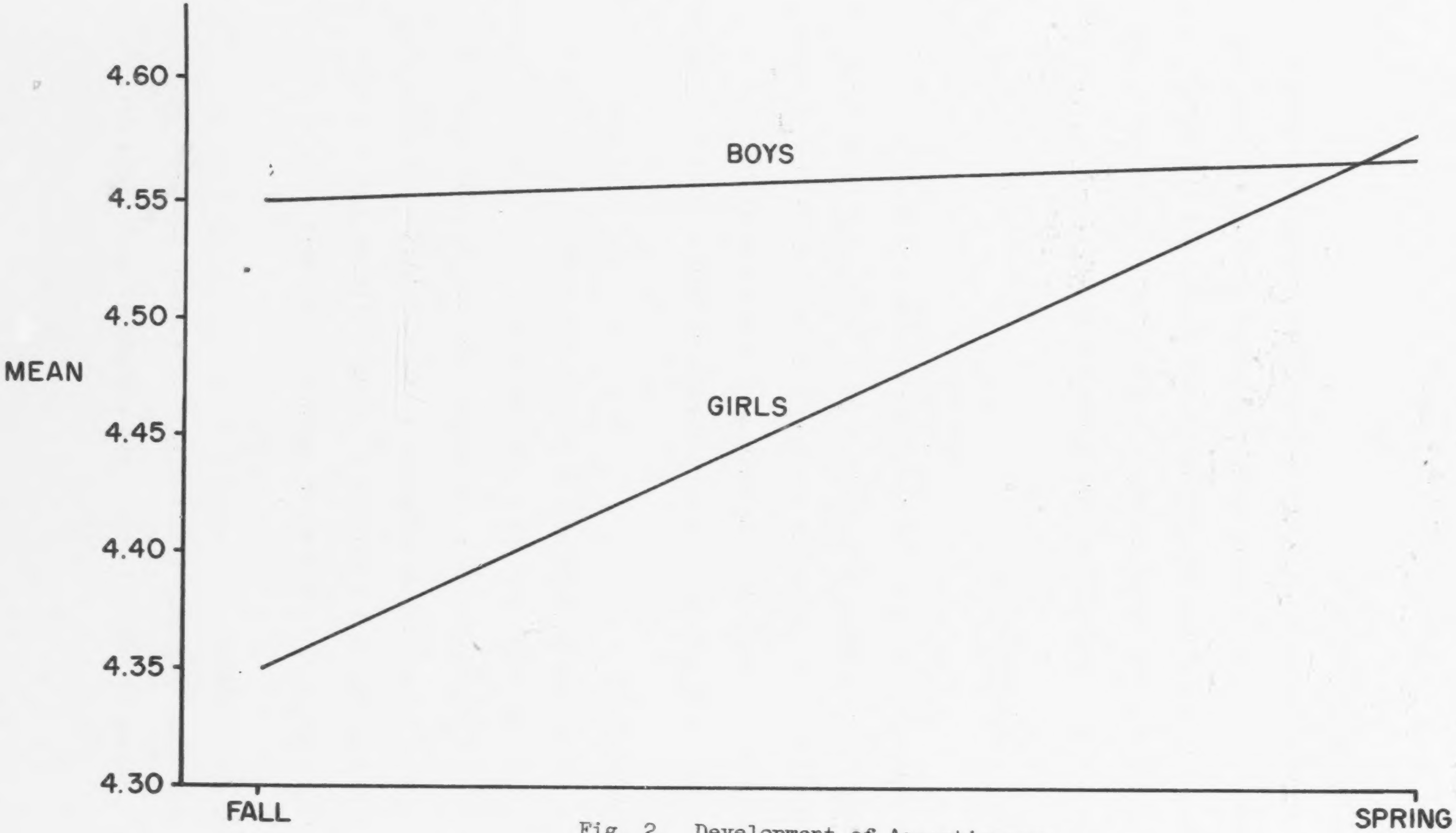

Fig. 2. Development of Assertiveness.

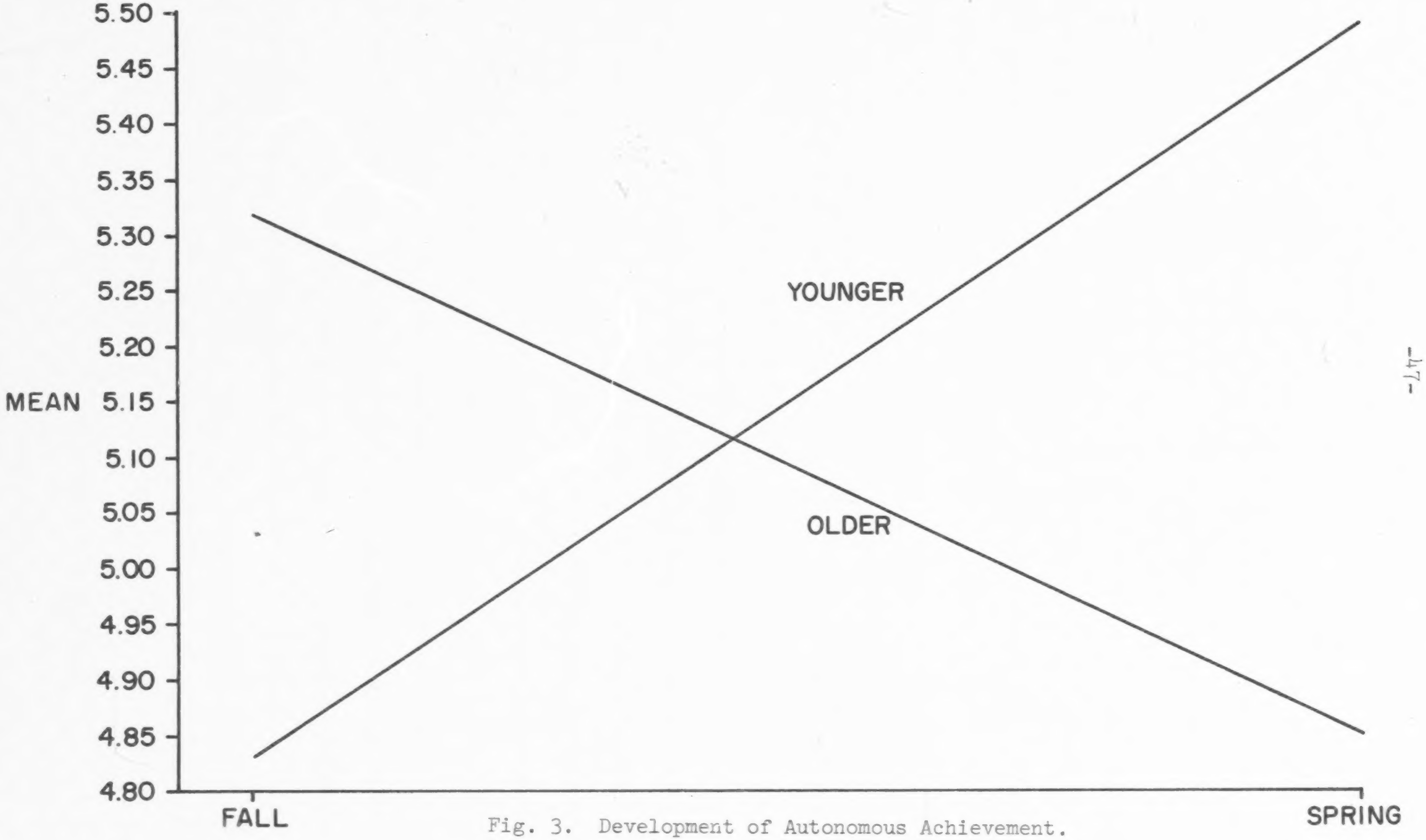

Fig. 3. Development of Autonomous Achievement.

($p < .05$) during the Spring than during the Fall. This pattern reveals important changes along the major pathway, especially in the region where the third dimension intersects the circumplex plane.

Sex Main Effects

Girls exhibited more Autonomous Achievement ($p < .05$), Cognitive Activity ($p < .001$), Fine Manipulative Activity ($p < .05$), and Artistic Activity ($p < .05$) than boys, whereas boys exhibited more child-oriented behaviors ($p < .05$), Gross Motor Activity ($p < .001$), and Fantasy Activity ($p < .001$) than girls. Some of these differences are perhaps best seen as evidence for sex typing, especially in the case of Gross Motor Activity, but it is of interest that an underlying basis for these differences is Task Vs. Person Orientation in the present model, with girls exhibiting more task-oriented behaviors and boys more person-oriented behaviors. Whether this outcome also would characterize a predominantly white middle class sample remains unclear. While there is some evidence that preschool middle class girls exhibit more Autonomous Achievement than boys (Emmerich, 1966), the present sex difference with regard to Task Vs. Person Orientation has not been well documented in middle class samples, since, as noted earlier, this particular dimension has not been emphasized generally in previous research. It remains for future studies to determine whether this sex difference reflects a "deficit" in boys relative to girls in this sample with regard to task competencies and achievement motivation, as suggested by recent discussions of the impact of family organization within economically disadvantaged black subcultures (Bronfenbrenner, 1967).

Individual Stabilities Within Subgroups

Table 15 presents Fall_1 X Spring stability coefficients within the four sex-age subgroups for each of the 18 construct measures. The fact that these coefficients generally were quite low is not surprising, as measurement within periods was based upon only one 30-minute sample of behavior.

Low stability of individual differences can be the consequence of several factors, including systematic developmental change (Emmerich, 1968a, 1969a; Kagan & Moss, 1962; Schaefer & Bayley, 1963). Since measurement within periods was limited in the present study, it becomes difficult to disentangle attenuation of stability due to nonoptimal measurement from that due to substantive factors. Nonetheless, certain findings are interpretable in relation to the present structural-developmental model.

First, it appears that some measures were more consistently stable than others. Specifically, constructs at the extremes of the extroversion-introversion axis on the circumplex tended to be somewhat more stable. (Inspection of Table 5 indicates that these variations in stability were not due simply to corresponding variations in rater reliability.) While any conclusion from the present data is highly tentative, these findings suggest that individual change is less likely to occur at the extremes of the major developmental pathway.

Developmental Transformations

The question of individual stability on separate construct measures is only one aspect of the broader problem of predicting developmental change within the total structure. In dealing with this larger issue, consideration needs to be given both to temporal correlations _within_ measures (stabilities)

Table 15

Fall$_1$ X Spring Stability Coefficients Within Subgroups

Construct	No.	Younger Boys	Younger Girls	Older Boys	Older Girls
Sociable	1	.16	.33	.38	.45
Loving	2	.23	.21	.22	.14
Cooperative-Interpersonal	3	.30	.21	.18	.07
Cooperative-Impersonal	4	.27	.14	.34	-.06
Compliant	5	.09	.02	.24	-.06
Submissive	6	.31	.27	.24	.35
Withdrawn	7	.29	.27	.33	.26
Distrusting	8	.17	.12	.31	.19
Defiant-Hostile	9	.12	.08	.18	-.03
Assertive	10	.15	.34	.34	.17
Adult Orientation	11	.36	.32	.34	.31
Autonomous Achievement	13	.05	-.08	.11	.04
Cognitive Activity	14	.10	.16	.18	.21
Fine Manipulative Activity	15	.03	.13	.23	.16
Artistic Activity	16	.11	.16	.10	.21
Child Orientation	12	.14	.32	.30	.19
Gross Motor Activity	17	.28	.13	.26	-.03
Fantasy Activity	18	.11	.05	.15	.20

and to temporal correlations between measures (transformations). The following procedure was adopted to detect the latter kind of change. Within each sex-age group, a construct measured in $Fall_1$ was correlated with all 18 measures taken in the Spring. Also, the same construct measured in the Spring was correlated with all 18 measures taken in $Fall_1$. If, for any particular measure within a particular subgroup, $Fall_1$-to-Spring correlations differ in pattern from those for Spring-to-$Fall_1$, such a difference may be interpretable as a systematic developmental change, perhaps in terms of the present model. Of course, this kind of analysis is less meaningful when temporal correlations are very low, as was often the case here. Consequently, the present search for developmental transformations is limited to those constructs within subgroups having at least one $Fall_1$ X Spring correlation (other than the stability coefficient) that was $\geq +.30$ ($p < .001$, two-tailed). These correlations are reported in Table 16.

The logic used in interpreting findings reported in Table 16 is as follows. Each major column of the table represents a construct within a subgroup having at least one $Fall_1$ X Spring correlation meeting the above criterion. Within each major column, paired correlations represent predictions from the construct to the other constructs, one from $Fall_1$-to-Spring, and the other from Spring-to-$Fall_1$. If these paired correlations are of approximately the same magnitude (and in the same direction), $Fall_1$-to-Spring and Spring-to-$Fall_1$ predictions are temporally symmetrical and therefore provide no basis for inferring the presence of developmental change. On the other hand, if the $Fall_1$-to-Spring correlation is high relative to its Spring-to-$Fall_1$ counterpart, temporal asymmetry is inferred and the change is considered a developmental shift.

Table 16

Fall$_1$ X Spring Transformation Correlations Within Subgroups

Construct	No.	Younger Boys		Younger Girls		Younger Girls		Younger Girls		Younger Girls		Younger Girls		Younger Girls	
		Child Orientation		Sociable		Loving		Cooperative-Interpersonal		Distrusting		Assertive		Child Orientation	
		$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$
Sociable	1	.23	.06	.33*	.33*	.24	.21	.30	.11	-.24	-.12	.22	.44	.30	.37
Loving	2	.33	.07	.21	.24	.21*	.21*	.34	.16	-.19	-.11	.20	.37	.35	.25
Cooperative-Interpersonal	3	.12	-.01	.11	.30	.16	.34	.21*	.21*	-.18	-.18	.21	.32	.04	.15
Cooperative-Impersonal	4	-.03	.02	.00	.14	.05	.27	.10	.15	-.08	-.14	.03	.19	.05	.03
Compliant	5	-.04	-.03	-.13	-.06	-.10	-.08	-.09	-.02	.13	.03	-.12	-.10	-.04	-.23
Submissive	6	-.19	-.17	-.24	-.15	-.19	-.12	-.18	-.14	.18	.05	-.25	-.31	-.19	-.26
Withdrawn	7	-.33	-.07	-.34	-.24	-.29	-.16	-.29	-.02	.31	.06	-.30	-.35	-.35	-.27
Distrusting	8	-.07	.05	-.12	-.24	-.11	-.19	-.18	-.18	.12*	.12*	-.20	-.33	-.11	-.18
Defiant-Hostile	9	.03	-.01	.03	.08	.11	.07	.05	.17	-.14	-.17	.09	.13	-.11	.17
Assertive	10	.22	.17	.44	.22	.37	.20	.32	.21	-.33	-.20	.34*	.34*	.34	.31
Adult Orientation	11	.13	.15	.29	.04	.19	.01	.12	-.10	-.11	.13	.10	.11	.34	.05
Autonomous Achievement	13	-.09	.07	.12	-.09	.11	.00	.00	-.12	-.14	.23	-.03	.13	.03	.06
Cognitive Activity	14	.15	.09	.10	.06	.13	.10	.12	.00	-.16	-.02	-.05	.00	.09	.14
Fine Manipulative Activity	15	.01	-.06	-.08	-.05	.01	.01	-.03	-.09	.04	-.02	-.12	-.06	.11	.00
Artistic Activity	16	.00	.11	.10	.05	.17	.12	.14	.03	-.19	.07	.13	.21	.16	.11
Child Orientation	12	.14*	.14*	.37	.30	.25	.35	.15	.04	-.18	-.11	.31	.34	.32*	.32*
Gross Motor Activity	17	.05	.08	.20	.14	.16	.08	.10	.03	-.14	-.01	.12	.18	.05	.19
Fantasy Activity	18	.15	.05	.13	.06	-.02	.11	.07	-.04	.00	.04	.13	.13	.10	.20

Table 16 (Cont'd)

Construct	No.	Older Boys Sociable $F_1 \to S$	Older Boys Sociable $S \to F_1$	Older Boys Defiant-Hostile $F_1 \to S$	Older Boys Defiant-Hostile $S \to F_1$	Older Boys Autonomous Achievement $F_1 \to S$	Older Boys Autonomous Achievement $S \to F_1$	Older Girls Sociable $F_1 \to S$	Older Girls Sociable $S \to F_1$	Older Girls Withdrawn $F_1 \to S$	Older Girls Withdrawn $S \to F_1$
Sociable	1	.38*	.38*	.07	.04	-.10	.04	.45*	.45*	-.31	-.32
Loving	2	.31	.19	.14	-.03	-.05	.05	.25	.28	-.14	-.20
Cooperative-Interpersonal	3	.09	.06	.01	-.11	.13	.09	.11	.16	.00	-.16
Cooperative-Impersonal	4	.03	-.09	-.19	-.17	.28	.13	-.08	.03	.15	-.03
Compliant	5	-.01	-.09	-.24	-.19	.17	.12	-.15	.12	.22	-.14
Submissive	6	-.07	-.14	.15	-.04	-.15	-.16	-.25	-.11	.36	.11
Withdrawn	7	-.33	-.27	-.14	.02	-.10	-.11	-.32	-.31	.26*	.26*
Distrusting	8	-.22	-.07	.01	-.03	.11	-.10	-.12	-.25	-.02	.28
Defiant-Hostile	9	.04	.07	.18*	.18*	-.22	-.03	.02	.01	-.10	.06
Assertive	10	.23	.25	.30	.10	-.05	.10	.34	.23	-.29	-.23
Adult Orientation	11	.05	-.08	.03	.00	.30	.05	.12	.07	-.01	-.03
Autonomous Achievement	13	.04	-.10	-.03	-.22	.11*	.11*	-.07	-.12	.02	.04
Cognitive Activity	14	-.09	-.01	.03	-.15	.21	-.05	.06	-.14	-.08	-.04
Fine Manipulative Activity	15	-.06	-.14	-.03	-.08	.30	.10	-.16	-.30	.07	.14
Artistic Activity	16	.01	-.05	.01	.03	.11	.07	.03	-.13	-.08	.10
Child Orientation	12	.23	.25	-.04	-.03	.08	.07	.24	.23	-.22	-.21
Gross Motor Activity	17	.11	.23	.14	.11	-.09	-.01	.18	.15	-.09	-.06
Fantasy Activity	18	.07	.18	.03	.04	.06	.06	.26	.11	-.26	-.07

*Stability Coefficients

Note:--Column headings define the subgroup, construct, and kind of temporal correlation. $F_1 \to S$ signifies correlation of the construct measured in Fall_1 with all other measures taken in the Spring. $S \to F_1$ signifies correlation of the construct measured in the Spring with all other measures taken in Fall_1.

Inspection of Table 16 indicates that changes for Assertive in Younger Girls and for Sociable in Older Girls were temporally symmetrical, and so these results will not be considered further.

Only one construct (Child Orientation) met the criterion in Younger Boys. As seen in Table 16, Younger Boys who were child-oriented in the Fall tended to become increasingly Loving in the Spring. Also, the Fall_1-to-Spring correlations with Child Orientation exhibited a perfect circumplex ordering, with the above transformation coefficient being the highest in this circumplex ordering. It is noteworthy that this correlation's value of .33 was considerably higher than the stability coefficient of .14 for the construct! In terms of the structural-developmental model, it would appear that younger boys who start out being sociable toward peers tend to express increasingly greater positive affect toward others during the academic year.

Developmental change occurred on five constructs in Younger Girls. As seen in Table 16, Younger Girls who were Sociable, Loving, or Cooperative-Interpersonal in the Fall became increasingly Assertive in the Spring. Those who were Cooperative-Interpersonal in the Fall also tended to become increasingly Loving in the Spring. Again, these transformation coefficients were embedded in circumplex orderings of Fall_1-to-Spring correlations, and were higher than their respective stability coefficients. These developmental changes reflect shifts across or around the circumplex that are consistent with the structural-developmental model.

Younger Girls who were Distrusting in the Fall tended to become increasingly Withdrawn in the Spring, suggesting a minor retreat from a somewhat more outgoing stance.

Younger Girls who were child-oriented in the Fall tended to become increasingly adult-oriented in the Spring. Since Younger Girls who were child-oriented in the Fall also tended to be child-oriented (and Loving) in the Spring, this change seems to reflect a depolarization of Adult Vs. Child Orientation. This finding will be examined later in greater detail.

Older Boys who were Sociable in the Fall tended to become Loving in the Spring, although this shift was less marked than those noted above. Also, Older Boys who were Defiant-Hostile in the Fall tended to become Assertive in the Spring, and Autonomous Achievement in the Fall was correlated with Adult Orientation and Fine Manipulative Activity in the Spring. All of these changes are highly consistent with the present structural-developmental model.

Older Girls who were Withdrawn in the Fall tended to become increasingly Submissive in the Spring.

Theoretical Implications

Transformational findings within subgroups as well as mean differences between subgroups strongly indicate that developmental change tends to occur between regions that are adjacent within the total structure. More generally stated, constructs within the personal-social domain are interrelated in a way that is explicated by an ordering paradigm, and developmental changes among ordered constructs follow a principle of structural proximity (Foa, 1968).

Earlier it was suggested that the most pervasive developmental trend within the structure would be increasing outgoingness and positiveness. With one exception, the transformations reported above were consistent with this expectation. The exception was a tendency for Younger Girls who were Distrusting in the Fall to become increasingly Withdrawn in the Spring.

Of course, this exception is understandable if one assumes that development in girls around the circumplex is unlikely via the route of Hostile-Compliant, for reasons of sex typing. Such an interpretation receives further support from the findings that Older Girls who were Withdrawn in the Fall became increasingly Submissive in the Spring, and that Older Boys who were Defiant-Hostile in the Fall became increasingly Assertive in the Spring. However, the usual sex typing interpretation does not account for other findings in girls, who generally became increasingly Assertive from Fall to Spring (Figure 2), especially if they were younger and started out as Sociable, Loving, or Cooperative-Interpersonal in the Fall (Table 16). However, it will be noted that the behaviors under discussion are subject to general social norms as well as more specific sex-typed norms. There is evidence that roughly the same general social norms often apply to boys and girls (Emmerich, 1969b; Emmerich, Goldman, & Shore, 1971; Stolz, 1967), whereas norms governing responses to child deviations from these general normative expectations tend to be sex typed (Bronfenbrenner, 1961; Hatfield, Ferguson, & Alpert, 1967; Stolz, 1967). With regard to the present findings, this interpretation suggests that defiance and aggression generally are proscribed at this age regardless of sex, although they may be tolerated more in boys than in girls, whereas assertiveness would be considered appropriate in both sexes.

Results for the Fall$_1$ X Fall$_2$ Sample

Mean Differences

Each subject in this sample was rated at two different times in the Fall (Fall$_1$ and Fall$_2$), and analyses were performed on these two ratings combined.

Table 17 presents $Fall_1$ + $Fall_2$ means for the Sex X Age of Entry X Period (Early Vs. Late) breakdowns, and Table 18 summarizes the Analysis of Variance for each of the 18 construct measures.

Changes between the two periods within the Fall were massive. The nature and magnitudes of these changes signify once again the general developmental trend toward more outgoing behaviors (Tables 17 and 18). Moreover, comparison of Tables 14 and 18 reveals that period effects were considerably more powerful within the Fall than between the Fall and Spring, indicating that this general developmental change is accelerated during the Fall. It is also of interest that the pattern of change from Early to Late Fall was perfectly ordered on the circumplex, as seen from the relative magnitudes of F Values given in Table 18.

The greatest amount of change on the circumplex occurred near that region where it is intersected by the dimension of Task Vs. Person Orientation. Moreover, Autonomous Achievement increased markedly between Early and Late Fall in all subgroups ($p < .001$), whereas the $Fall_1$ X Spring analysis of this behavior suggested that it reaches an asymptote during the Spring in older children. These findings signify that the rapid and generalized changes noted in the Fall occurred primarily in the "middle" region along the major structural pathway.

Some effects reported in Table 18 were roughly the same as those for the $Fall_1$ X Spring sample (Table 14). For example, in both sets of analyses Submissive, Withdrawn, and Distrusting were greater in Younger than in Older Children, significantly so in the case of Submissive ($ps < .05$). Apparently, the older child's relatively greater outgoingness holds generally throughout

Table 17

Sex X Age X Period (Early Vs. Late) Subgroup Means

for $Fall_1 + Fall_2$ Measures

Construct	No.	Boys				Girls			
		Younger		Older		Younger		Older	
		Early	Late	Early	Late	Early	Late	Early	Late
Sociable	1	4.50	4.69	4.45	4.85	4.28	4.48	4.52	4.76
Loving	2	4.90	5.16	4.96	5.29	4.83	5.08	4.98	5.21
Cooperative-Interpersonal	3	4.58	4.85	4.66	5.11	4.65	5.07	4.83	4.89
Cooperative-Impersonal	4	4.52	4.78	4.46	4.77	4.71	4.96	4.85	4.83
Compliant	5	4.30	4.42	4.15	4.49	4.33	4.66	4.45	4.55
Submissive	6	3.85	3.76	3.69	3.59	3.82	3.87	3.68	3.64
Withdrawn	7	5.98	5.65	5.78	5.18	6.31	5.76	5.95	5.72
Distrusting	8	7.11	6.88	7.06	6.52	7.22	6.87	7.17	6.43
Defiant-Hostile	9	11.66	11.22	11.97	11.44	11.70	10.92	11.33	11.28
Assertive	10	4.35	4.54	4.51	4.85	4.24	4.28	4.36	4.49
Adult Orientation	11	7.79	7.44	7.21	7.37	7.75	7.56	8.60	7.07
Autonomous Achievement	13	5.34	6.90	5.84	7.16	5.61	7.04	5.68	6.57
Cognitive Activity	14	.40	.45	.56	.64	.45	.56	.52	.64
Fine Manipulative Activity	15	1.32	1.25	1.32	1.29	1.32	1.57	1.45	1.33
Artistic Activity	16	.77	.92	.61	.78	.80	1.06	.96	.83
Child Orientation	12	6.43	6.40	5.65	6.78	4.85	6.36	6.12	5.78
Gross Motor Activity	17	1.14	1.19	1.14	1.37	.76	.66	.75	.85
Fantasy Activity	18	1.27	1.13	1.24	1.32	.91	.97	1.02	.97

Table 18

Summaries of Analyses of Variance: Sex X Age X Period (Early Fall Vs. Late Fall)

Construct	No.	F Values						
		Sex X Age[a] X Period	Sex X Age[b]	Sex X Period[b]	Age X Period[b]	Sex[c]	Age[c]	Period[c]
Sociable	1	.19	1.12	.11	.49	2.01	2.63	6.96**
Loving	2	.12	.07	.11	.05	.88	2.76	14.62***
Cooperative-Interpersonal	3	3.16	1.35	.32	.26	.31	1.41	15.66***
Cooperative-Impersonal	4	1.94	.07	1.80	.76	10.00**	.07	12.73***
Compliant	5	2.78	.07	.01	.00	4.21*	.09	11.07***
Submissive	6	.05	.02	.41	.12	.17	5.39*	.34
Withdrawn	7	.92	.23	.03	.00	4.16*	3.01	7.81**
Distrusting	8	.03	.02	.32	1.64	.05	2.94	10.96***
Defiant-Hostile	9	1.95	.74	.01	.97	2.21	.96	9.94**
Assertive	10	.02	.18	1.18	.50	7.83**	6.59*	4.62*
Adult Orientation	11	1.89	.48	1.02	.31	.31	.06	1.81
Autonomous Achievement	13	.08	1.21	.26	.52	.07	.15	25.14***
Cognitive Activity	14	.01	.67	.19	.06	.32	4.41*	2.24
Fine Manipulative Activity	15	1.33	.06	.43	2.73	1.87	.56	.46
Artistic Activity	16	2.48	.76	.33	1.81	3.92*	2.43	3.54
Child Orientation	12	6.87**	.67	.11	.22	6.39*	.04	3.92*
Gross Motor Activity	17	.01	.00	1.10	1.87	45.29***	2.12	.97
Fantasy Activity	18	1.20	.07	.15	.17	16.28***	.84	.09

[a] $df_1 = 1$, $df_2 = 407$

[b] $df_1 = 1$, $df_2 = 408$

[c] $df_1 = 1$, $df_2 = 411$

* $\underline{p} < .05$

** $\underline{p} < .01$

*** $\underline{p} < .001$

the academic year. The same conclusion applies to Cognitive Activity, which again was greater in Older than in Younger Children ($p < .05$).

There were also differences in outcomes between the two sets of analyses. A more detailed consideration of these differences seems unwarranted, however. Massive period effects within the Fall could have masked other more subtle differences and interactions for the year as a whole, already noted in the Fall$_1$ X Spring analyses. More importantly, differences due to sampling (St. Louis data were excluded from the Fall$_1$ X Fall$_2$ sample) could be confounded with substantive factors in determining significant effects. Actually, outcomes for the two sets of analyses tended to be mutually consistent, so these reasons for exercising caution do not appear to have been critical. Nevertheless, they could have made enough of a difference to lead to misinterpretations of minor variations in significant effects.

Stabilities and Predictabilities

Short-term Fall$_1$ X Fall$_2$ stability coefficients for the total sample are given in Table 19. Stabilities generally were low and similar in magnitudes to those for the (longer) period between Fall$_1$ and the Spring (Table 15). These findings support the earlier conclusion that several samplings of behaviors within time periods would be required to arrive at construct measures having even moderately high individual stabilities.

Again, the pattern of differential stabilities among construct measures indicated greatest fixedness at the two extremes of the major developmental pathway.

Temporal instabilities can be due to systematic as well as random changes. Three kinds of systematic change are of particular interest here. The most

Table 19

$Fall_1$ X $Fall_2$ Stability and Multiple Prediction Correlations for the Total Sample (N = 415)

Construct	No.	r	R $F_1 \rightarrow F_2$	R $F_2 \rightarrow F_1$
Sociable	1	.32**	.43**	.44**
Loving	2	.28**	.36**	.37**
Cooperative-Interpersonal	3	.19**	.32**	.31*
Cooperative-Impersonal	4	.09	.27	.31*
Compliant	5	.17**	.27	.36**
Submissive	6	.23**	.45**	.34**
Withdrawn	7	.39**	.45**	.47**
Distrusting	8	.26**	.35**	.35**
Defiant-Hostile	9	.20**	.34**	.30*
Assertive	10	.30**	.45**	.45**
Adult Orientation	11	.36**	.44**	.40**
Autonomous Achievement	13	.06	.27	.27
Cognitive Activity	14	.22**	.36**	.36**
Fine Manipulative Activity	15	.08	.33**	.28
Artistic Activity	16	.13*	.28	.34**
Child Orientation	12	.30**	.39**	.40**
Gross Motor Activity	17	.28**	.38**	.39**
Fantasy Activity	18	.20**	.36**	.33**

*$p < .01$

**$p < .001$

Note.--$F_1 \rightarrow F_2$ signifies that predictors are the 18 $Fall_1$ measures; $F_2 \rightarrow F_1$ signifies that predictors are the 18 $Fall_2$ measures.

obvious is change in the child's situation at the time of measurement. For example, an immediate situational press to respond socially may be so powerful that it overrides whatever individual differences might be elicited in another kind of situation. A second kind of systematic change consists of personality transformations of the type reported earlier for Fall_1 X Spring subsamples. (Since the time interval between Fall_1 and Fall_2 ratings was so short, detailed examination of transformations within the Fall seems unwarranted.) A third kind of change could arise from interactions between personality and situational factors. Here, the situation changes from time to time and situational responses vary according to the personality of the respondent. Consider the following example of likely differential relationships between press and behavior in extremely sociable and withdrawn children. For the sociable child, amount and/or intensity of social behavior probably would be roughly proportional to the strength of the situational press to respond socially. For the withdrawn child, however, this relationship seems less likely to hold.

The fact that stabilities generally were low indicates that situational variance was considerable. On the other hand, certain stabilities (Table 19) and temporal correlations across constructs (not reported here) did reach significant levels. While it is not possible here to disentangle the contributions of personality and personality x situation variance, one global index of such changes is the multiple correlation which predicts a construct measure at one time from the set of 18 measures taken at another time. Excluding capitalization on chance, the extent to which this multiple prediction improves upon the stability coefficient should be some (unknown) joint function of the amount of personality and personality x situation variance. In general, personality transformations would build up the multiple correlation by boosting the value of the highest temporal correlation, while personality x situation variance would build up the multiple correlation by introducing suppressor effects.

These multiple correlations are listed in Table 19. It will be noted, first of all, that short-term predictions can be improved somewhat through a multivariate prediction strategy, although there is a ceiling for the present data presumably due to limited sampling within time periods. It is likely that an extension of the present measurement system to include several independent ratings within time periods would lead to reasonably high multiple predictions of individual differences over time in the personal-social domain, as has been achieved in previous research (Emmerich, 1964).

Of special interest is the finding that multiple correlations increased short-term predictability even for construct measures having the lowest stabilities, supporting the inference that systematic personality and/or personality x situation changes were operating.

Construct Correlates of Masculine-Feminine and Dependent-Independent

Several Bipolar Scales including Masculine-Feminine (B.P. 2) and Dependent-Independent (B.P. 14) were excluded from the earlier structural analyses because they were not critical in achieving a close match with the circumplex model. However, these scales can be mapped into the three-space for the purpose of clarifying their meanings. The median interrater reliabilities of these scales were .82 and .65, respectively (Appendix E).

Masculine-Feminine

Table 20 presents correlations of Masculine-Feminine with each of the 18 construct measures separately by sex-age-period (Fall_1 X Spring) subgroup. Two kinds of discontinuity are evident from these findings. First and foremost, extroverted boys were judged to be more masculine and extroverted girls were judged to be more feminine. Thus, appropriate "sex typing" covaried positively in both sexes with increasing outgoingness of behavior. This finding may be surprising in relation to traditional theories of sex-role development, but is generally consistent with the recent findings of Vroegh (1968, 1971). Moreover, this difference between the sexes with regard to the meaning of masculinity-femininity at this age is in keeping with the present structural model. Judgments about certain behavioral qualities cannot be made unless the child is sufficiently outgoing to exhibit these qualities. This conclusion seems obvious, but it also suggests that previous observation-rating studies of young children may have confounded the general developmental trend toward increasing outgoingness with signs taken to be specific to the development of sex typing. In particular, Hostile-Defiant (aggressive) behaviors in boys, often considered to be "masculine," and Submissive (passive) behaviors in girls, often considered to be "feminine," may be poor indicators of these constructs in young children since they are subsumed by the more fundamental general developmental trend. This conclusion is consistent with the earlier suggestion that general social norms for appropriate behaviors are similar for the sexes, although more specific norms dealing with violations of general norms probably are sex typed.

Table 20

Correlations of Masculine-Feminine with the 18 Construct Measures

Construct	No.	Boys				Girls			
		Younger		Older		Younger		Older	
		Fall$_1$	Spring	Fall$_1$	Spring	Fall$_1$	Spring	Fall$_1$	Spring
Sociable	1	.36	.38	.30	.27	-.32	-.02	-.30	-.02
Loving	2	.44	.45	.18	.25	-.33	-.09	-.43	-.14
Cooperative-Interpersonal	3	.26	.21	.25	.06	-.31	-.13	-.41	-.22
Cooperative-Impersonal	4	-.18	-.20	-.17	-.21	-.32	-.19	-.30	-.40
Compliant	5	-.03	-.09	-.21	-.20	-.15	.05	-.23	-.11
Submissive	6	-.26	-.44	-.44	-.43	-.04	.12	.27	.10
Withdrawn	7	-.41	-.44	-.32	-.33	.35	.16	.46	.27
Distrusting	8	-.32	-.07	-.16	-.19	.33	.01	.39	-.03
Defiant-Hostile	9	.06	.12	.21	.18	.15	-.02	.03	.12
Assertive	10	.42	.46	.43	.58	-.14	-.31	-.26	-.19
Adult Orientation	11	-.08	.11	-.07	.04	-.09	-.10	.05	-.14
Autonomous Achievement	13	.07	-.04	-.04	.13	-.09	-.22	-.27	-.17
Cognitive Activity	14	.01	-.01	.01	-.13	-.04	-.13	-.13	-.15
Fine Manipulative Activity	15	-.22	-.13	-.28	-.19	.14	-.23	.06	-.22
Artistic Activity	16	-.10	-.04	-.13	.09	-.07	.02	.02	-.13
Child Orientation	12	.19	.19	.14	.15	-.32	-.17	-.39	-.03
Gross Motor Activity	17	.48	.41	.34	.26	-.05	.21	-.07	.28
Fantasy Activity	18	.16	.18	-.07	.30	-.38	-.43	-.46	-.25

Note.--Positive correlations signify that the construct is associated with the Masculine pole of the Masculine-Feminine Bipolar Scale.

Raters judged boys generally to be more masculine (or less feminine) than girls ($\underline{p} < .001$), as seen from Tables 21 and 22. At first glance it seems paradoxical that a comparison of mean levels "validates" the construct of masculinity-femininity, whereas, as noted above, a mapping of the construct into the overall structure does not. However, the present argument is not that signs of sex typing were totally absent, but rather that they were sometimes difficult to distinguish from behaviors defining the major structural pathway. Inspection of Table 20 indicates, for example, that Gross Motor Activity was consistently associated with masculinity, at least in boys.

Inspection of Table 20 also reveals developmental discontinuities within the sexes with regard to the meaning of masculinity-femininity. Among Younger Boys, masculinity was about equally associated with Assertive, Sociable, and Loving on the circumplex, whereas among Older Boys masculinity was most closely associated with Assertive. It would appear that in Younger Boys it was particularly difficult to disentangle general behavioral cues signifying outgoingness from more specific signs of masculinity, whereas these two constructs were more readily distinguished in Older Boys.

Femininity in girls was more associated with outgoing behaviors on the circumplex in the Fall than in the Spring. Moreover, femininity in girls tended to be somewhat more associated with Person Orientation in the Fall and with Task Orientation in the Spring. Thus, for girls, appropriate sex typing in the Fall was difficult to distinguish from sociality in general, whereas these two constructs were better differentiated in the Spring.

Are such discontinuities in the meaning of a global construct due primarily to changing patterns of behavior in children or to changing trait

Table 21

Subgroup Means for Masculine-Feminine and Dependent-Independent (Fall$_1$ X Spring)

Measure	No.	Boys				Girls			
		Younger		Older		Younger		Older	
		Fall$_1$	Spring	Fall$_1$	Spring	Fall$_1$	Spring	Fall$_1$	Spring
Masculine-Feminine	B.P.2	4.59	4.45	4.63	4.55	3.41	3.36	3.18	3.39
Dependent-Independent	B.P.14	4.70	4.89	4.87	5.02	4.60	5.04	4.83	4.94

Note.--Higher scale values signify greater Masculinity and Independence, respectively.

Table 22

Summaries of Analyses of Variance for Masculine-Feminine and Dependent-Independent (Fall$_1$ X Spring)

Measure	No.	F Values						
		Sex X Age X Period[a]	Sex X Age[a]	Sex X Period[b]	Age X Period[b]	Sex[b]	Age[b]	Period[c]
Masculine-Feminine	B.P.2	1.26	3.11	4.57*	3.09	610.72***	.03	.14
Dependent-Independent	B.P.14	2.37	.49	1.29	3.27	.04	3.32	21.04***

[a] $df_1 = 1$, $df_2 = 592$

[b] $df_1 = 1$, $df_2 = 593$

[c] $df_1 = 1$, $df_2 = 595$

* $p < .05$

** $p < .01$

*** $p < .001$

organization in the cognitive structures of judges? This general issue cannot be resolved here, but certain features of the results point to an answer for these data. It may be obvious that children must reach some minimal threshold of outgoingness before other qualities of their behavior in natural settings can be judged adequately. However, the present findings also indicate the presence of a developmental change in which the components of personal-social development in general become differentiated from those signifying sex-role development in particular. Not only is the direction of this change consistent with the structural-developmental model discussed earlier, but its specific manifestations differed in the sexes, as noted above, and it was under the control of different factors in boys and girls. Whereas age of entry was the critical independent variable in boys, period of measurement was the major factor associated with discontinuity in girls (Table 20). It is difficult to imagine how such a complex pattern of change in a common developmental direction could have occurred through transformations in the cognitive structures of raters.

Whether these same discontinuities would be found in middle class children and/or by a different population of raters remain questions for further research. One would expect in most children that general behavioral development becomes increasingly differentiated from signs specific to sex typing, although there are probably marked individual differences in the ages when this differentiation process begins and is completed. Moreover, the present evidence for (a) developmental changes in the meaning of masculinity-femininity and (b) sex differences in the nature of these changes, appears to be consistent with Vroegh's (1971) findings for older middle class children.

Dependent-Independent

Table 23 presents correlations of Dependent-Independent with each of the 18 construct measures, averaged across subgroups. Clearly, the dependency pole of this scale was most associated with introverted behavior in general and Withdrawn in particular. This outcome is generally consistent with previous mappings of dependency onto the circumplex (Maccoby & Masters, 1970).

It is of interest that independence correlated positively and most consistently with two nonadjacent constructs on the circumplex, namely Cooperative-Interpersonal and Assertive. It would appear that cooperativeness and assertiveness both connote greater independence from other persons than Sociable and Loving. This outcome is reasonable when viewed in the context of the present structure, although it has not been noted so explicitly in previous research. It also illustrates how a scale defined as bipolar can be found empirically to be more complex in meaning when embedded in a larger structural network.

Since this scale extended along the major developmental pathway, one would expect a developmental trend in which children become increasingly independent (or less dependent). As seen in Tables 21 and 22, independence did increase from Fall to Spring ($\underline{p} < .001$).

Components of Adult and Child Orientation

Measures

Earlier analyses related composite measures of Adult and Child Orientation to the larger structure, but did not consider their separate components in detail. An analysis of this question by Maccoby and Masters (1970) as well

Table 23

Correlations of Dependent-Independent with the 18 Construct Measures, Averaged Across Subgroups

Construct	No.	$\bar{r}$
Sociable	1	.26*
Loving	2	.38**
Cooperative-Interpersonal	3	.46**
Cooperative-Impersonal	4	.25
Compliant	5	-.09
Submissive	6	-.33*
Withdrawn	7	-.47**
Distrusting	8	-.42*
Defiant-Hostile	9	.05
Assertive	10	.48**
Adult Orientation	11	-.06
Autonomous Achievement	13	.22
Cognitive Activity	14	.05
Fine Manipulative Activity	15	.04
Artistic Activity	16	.06
Child Orientation	12	.05
Gross Motor Activity	17	.13
Fantasy Activity	18	.16

Note.--Positive correlations signify that the construct is associated with the Independent Pole of the Dependent-Independent Bipolar Scale.

*$p < .001$ (two-tailed), in at least four out of eight subgroups.

**$p < .001$ (two-tailed), in at least seven out of eight subgroups.

as the part-whole correlations discussed earlier (Table 11) provided bases for deriving the following component measures.

An Affiliation component was derived by summing Attempts to Communicate Verbally, Seeks Attention Through Positive Bid, and Friendly.

A task-oriented social category, henceforth called Information Seeking, was derived from the sum of Seeks Information, Responsive to Teaching, and Seeks Help or Guidance. Seeks Praise or Approval and Seeks Evaluation also were task-oriented, but their greater emphasis upon social evaluation suggested the need for a distinct measure, called Recognition Seeking.

Part-whole correlations together with the structural-developmental model suggested that the sum of Seeks Physical Proximity, Imitates, and Seeks Leadership signifies an immature kind of "tagging along" or Attachment to another person in which the task- and person-oriented aspects of an act are still quite undifferentiated from each other. (It will be noted that the term "attachment" is used here in its narrow sense.)

Finally, there was interest in exploring a component not included in the earlier analyses, namely Social Control. This component was indexed by the sum of Seeks Attention Through Deliberate Negative Bid, Demanding, Rejects Reasonable Request, and Bosses. In deriving these new measures, Unipolar Scales 9, 18, 29, and 69 were summed for the adult measure, and Unipolar Scales 10, 19, 30, and 70 were summed for the child measure. Median inter-rater reliabilities of these scales were .77, .98, .81, 1.00, .75, .76, .70, and .76, respectively (Appendix E).

In summary, the following adult- and child-oriented component measures were derived: Affiliation-Adult (11a), Information Seeking-Adult (11b), Attachment-Adult (11c), Recognition Seeking-Adult (11d), Social Control-Adult (11e), Affiliation-Child (12a), Information Seeking-Child (12b), Attachment-Child (12c), Recognition Seeking-Child (12d), Social Control-Child (12e).

In the analyses that follow, component measures will be compared with regard to (1) base rate frequencies, (2) locations in the overall structure, (3) mean differences among subgroups, and (4) developmental transformations within subgroups. All analyses were based upon the Fall_1 X Spring sample.

Base Rate Frequencies

Base rate frequencies (means) for the component measures are reported for each subgroup in Table 24. Base rates for behaviors directed toward adults were higher for the two task-related components of Information Seeking and Recognition Seeking, while base rates for behaviors directed toward peers were higher for all other components. This outcome held without exception for the 40 relevant comparisons in Table 24, and in some instances comparable base rates differed by at least a factor or two. These findings strongly support the conclusion that the topographies of adult- and child-oriented behaviors are well differentiated at this age along the dimension of Task Vs. Person Orientation.

Locations of Components Within the Structure

Table 26 gives correlations of the components with the original construct measures, averaged across subgroups. (The correlations within subgroups are given in Appendix H.) Comparable adult- and child-directed components are grouped together in Table 26 to facilitate comparisons.

Table 24

Subgroup Means for Adult and Child Orientation Component Measures

Measure	No.	Boys				Girls			
		Younger		Older		Younger		Older	
		Fall$_1$	Spring	Fall$_1$	Spring	Fall$_1$	Spring	Fall$_1$	Spring
Information Seeking-Adult	11b	.95	.85	.85	.87	1.15	.98	.87	.96
Information Seeking-Child	12b	.38	.40	.47	.61	.48	.61	.45	.56
Recognition Seeking-Adult	11d	.27	.20	.22	.17	.25	.24	.28	.25
Recognition Seeking-Child	12d	.15	.12	.07	.07	.12	.08	.07	.09
Affiliation-Adult	11a	3.21	3.48	3.08	3.23	3.11	3.83	3.15	3.88
Affiliation-Child	12a	4.08	4.66	4.09	5.02	3.66	4.39	3.96	4.66
Attachment-Adult	11c	.42	.43	.33	.37	.43	.47	.39	.47
Attachment-Child	12c	.87	.99	.71	1.09	.63	.84	.77	.80
Social Control-Adult	11e	.49	.44	.60	.57	.46	.41	.22	.43
Social Control-Child	12e	1.04	1.28	1.29	1.35	1.12	1.41	1.32	1.26

Table 25

Summaries of Analyses of Variance for Adult and Child Component Measures

Measure	No.	F Values						
		Sex X Age[a] X Period	Sex X Age[a]	Sex X Period[b]	Age X Period[b]	Sex[b]	Age[b]	Period[c]
Information Seeking-Adult	11b	.35	.47	.00	1.85	2.00	1.29	.40
Information Seeking-Child	12b	.69	3.40	.25	.34	1.47	1.48	5.35*
Recognition Seeking-Adult	11d	.18	.59	.36	.00	1.42	.06	1.77
Recognition Seeking-Child	12d	.06	.95	.00	1.06	.30	3.73	.36
Affiliation-Adult	11a	.10	.63	6.37*	.09	2.59	.31	19.50***
Affiliation-Child	12a	1.27	.20	.05	1.08	6.91**	4.13*	77.86***
Attachment-Adult	11c	.01	.43	.22	.19	1.33	1.26	1.12
Attachment-Child	12c	2.62	.30	.74	.14	4.34*	.01	7.42**
Social Control-Adult	11e	1.59	4.22*	1.39	2.11	6.19*	.06	.08
Social Control-Child	12e	.24	.50	.05	2.23	.19	1.10	2.68

[a] $df_1 = 1$, $df_2 = 592$

[b] $df_1 = 1$, $df_2 = 593$

[c] $df_1 = 1$, $df_2 = 595$

* $\underline{p} < .05$

** $\underline{p} < .01$

*** $\underline{p} < .001$

Table 26

Correlations of Adult and Child Components with Construct Measures, Averaged Across Subgroups

Construct Measures	No.	Component Measures									
		Information Seeking		Recognition Seeking		Affiliation		Attachment		Social Control	
		Adult	Child	Adult	Child	Adult	Child	Adult	Child	Adult	Child
Sociable	1	.04	.22	.01	.11	.22	.58	.03	.24	.10	.26
Loving	2	.08	.15	.06	.10	.27	.43	.04	.18	.10	.19
Cooperative-Interpersonal	3	.03	.11	.10	.09	.16	.24	-.09	-.02	-.04	.13
Cooperative-Impersonal	4	.03	.04	.13	.13	.08	.07	-.10	-.07	-.22	-.10
Compliant	5	.07	.01	.04	.00	.01	.00	.03	.07	-.34	-.29
Submissive	6	-.02	-.08	.04	.01	-.18	-.24	-.04	.00	-.28	-.45
Withdrawn	7	-.10	-.14	-.09	-.09	-.32	-.52	-.01	-.15	-.11	-.29
Distrusting	8	.06	-.05	-.05	-.06	-.07	-.28	.10	-.03	.14	.03
Defiant-Hostile	9	-.04	-.04	-.06	-.07	-.04	-.11	-.07	-.12	.25	.24
Assertive	10	.12	.16	.03	.07	.29	.37	.04	.09	.29	.44
Adult Orientation	11	.72*	.06	.47*	.04	.87*	.12	.53*	.02	.28	.07
Autonomous Achievement	13	.16	.16	.23	.10	.30	.14	.04	.06	.06	.18
Cognitive Activity	14	.25	.08	.15	.01	.25	.08	.15	.03	.07	.04
Fine Manipulative Activity	15	.17	.09	.16	.08	.14	-.06	.07	-.06	.00	-.10
Artistic Activity	16	.18	.00	.15	.08	.25	.00	.08	-.03	.13	-.02
Child Orientation	12	.01	.53*	.02	.26*	.17	.79*	-.05	.67*	.05	.39
Gross Motor Activity	17	-.05	.05	-.05	.02	.08	.32	.02	.22	.10	.23
Fantasy Activity	18	-.06	.16	-.10	.04	.06	.35	-.05	.22	.01	.35

*Part-Whole Correlations

As expected, the task-oriented components of Information Seeking and Recognition Seeking generally were uncorrelated with the circumplex constructs. However, Information Seeking directed toward peers was somewhat associated with Sociable, indicating that this behavior has person-oriented qualities. Also, as expected, when these task-oriented components were directed toward adults they were more closely related to Autonomous Achievement, Cognitive Activity, Fine Manipulative Activity, and Artistic Activity than when they were directed toward peers.

Affiliation directed toward children was more strongly and consistently associated with Sociable on the circumplex than was Affiliation directed toward adults. Also, the former tended to be more associated with the person-oriented constructs of Gross Motor Activity and Fantasy Activity, whereas the latter was more associated with the task-oriented constructs. These findings match those discussed earlier for the third dimension, as expected.

Attachment to adults generally was uncorrelated with all constructs in the structure. Together with the relatively low base rate for this component, this outcome indicates that Attachment to adults is a rather poor descriptor of individual differences at this age, at least in the classroom setting. This conclusion appears to be consistent with previous research on predominantly white middle class children (Maccoby & Masters, 1970).

Attachment to peers was somewhat more associated with outgoing social behaviors on the circumplex, and tended to be associated with the person-oriented constructs of Gross Motor Activity and Fantasy Activity.

In reviewing the literature on generalization of responses from adults to children, Maccoby and Masters (1970) concluded that attention seeking but not proximity seeking is part of a general reciprocal interaction system at this age. The above topographical findings for Affiliation and Attachment support this view. Moreover, the correlation between Affiliation-Adult and Affiliation-Child averaged .25 across subgroups and was significant ($p < .001$, two-tailed) in five of the eight subgroups, whereas the correlation between Attachment-Adult and Attachment-Child averaged .05 across subgroups and did not reach statistical significance in any of the subgroups. The present structural findings indicate that it is precisely because Affiliation toward adult and child targets have similar locations on the circumplex that these measures shared common variance in this and previous studies. Thus, it was motivation to affiliate with others rather than dependency motivation in its traditional sense which characterized many social responses directed toward both adult and child targets. Here we reiterate the point made earlier that the meaning of a specific behavior depends not only upon its internal relationships with other presumed indicators of the same construct (homogeneity), but also and perhaps more fundamentally upon its relationships with other constructs distributed throughout the domain.

It is of interest that Attachment to peers was somewhat associated with social outgoingness on the circumplex and had a relatively high base rate. Thus, while Affiliation and Attachment were highly differentiated in relationships with adults, relationships with peers probably included an attachment component. We shall return to this point later in the discussion.

Turning to the component of Social Control, this behavior directed toward an adult target was associated with Assertive and Defiant-Hostile on the circumplex and with Adult Orientation on the third dimension. (It will be recalled that scales included in the measure of Social Control were not originally part of the Adult Orientation construct measure.) However, Social Control directed toward peers was more clearly associated with Assertive than with Defiant-Hostile, and also was consistently associated with all three person-oriented constructs. These findings not only support the conclusion that (negative) tactics of social control at this age index a certain amount of social outgoingness (Maccoby & Masters, 1970), they also reveal that the meaning of social control on the circumplex depends upon whether the target is an adult or another child.

Mean Differences Among Subgroups

Analyses of Variance of subgroup means are summarized in Table 25. Since the two affiliation components were most similar to the original Adult and Child Orientation measures, we would expect these components to share common effects with the original measures (Tables 13 and 14). This was the case with regard to the increase between Fall and Spring in both components and the sex difference for Affiliation toward children. However, there were additional effects when affiliation components were separated from the original measures. The Fall-to-Spring change in Affiliation toward adults was greater in girls than in boys (Sex X Period Interaction, $p < .05$). Apparently, with greater classroom experience an adult orientation becomes especially salient for girls, perhaps because girls tended to be more task-oriented generally than boys (Tables 13 and 14). Also, older children generally exhibited greater Affiliation toward peers than did younger children ($p < .05$), a tendency that was less clear in the original findings.

With regard to the two task-oriented components of Information Seeking and Recognition Seeking, the only effect was for Information Seeking toward peers to increase from Fall to Spring ($\underline{p} < .05$).

Perhaps the most interesting finding occurred for Attachment to peers, which increased between Fall and Spring ($\underline{p} < .01$) and was greater in boys than in girls ($\underline{p} < .05$). The first of these findings supports the earlier suggestion that relationships with peers includes an attachment component at this age. Indeed, this same finding occurred for three of the five components directed toward peers, but only for one component directed toward adults, suggesting that the former share a common developmental trend not shared by the latter. The observed sex difference is consistent with the previous findings indicating greater person-orientation in boys than in girls (Tables 13 and 14).

Social Control directed toward adults increased with age in boys and decreased with age in girls (Sex X Age Interaction, $\underline{p} < .05$). This outcome is consistent with the earlier suggestions that (1) negative behaviors generally are proscribed but are tolerated more in boys than in girls, and (2) sex typing is increasing with age during this period.

Developmental Tranformations

It will be recalled that Younger Girls who were child-oriented in the Fall tended to become increasingly adult-oriented in the Spring as well as remaining child-oriented in the Spring (Table 16). The question now arises whether this developmental transformation was "carried" more by certain components than by others.

Table 27 presents relevant transformation correlations for Younger Girls. It is clear that Younger Girls who directed affiliation toward peers in the Fall tended to be those who directed affiliation both toward peers (r = .37) and adults (r = .34) in the Spring. There were also (weaker) transformations between Affiliation-Child in the Fall and Information Seeking-Adult in the Spring, and between Attachment-Child in the Fall and (1) Affiliation-Adult and (2) Information Seeking-Adult in the Spring.

Since Affiliation was the primary carrier of this transformation in Younger Girls, the possibility arises that the developmental change on this particular component might also apply to other subgroups. The transformation correlations presented in Table 28 indicate that the same developmental change did occur in Older Boys, with a less clear but similar trend occurring in Younger Boys.

These findings are surprising because they reveal that relationships with children are precursors of relationships with adults during this age period. The present sample tended to be a little older than those of previous studies, and so this change could have been a later one in a two-phase developmental sequence. It is not unreasonable to expect the first phase of such a sequence to be a shift from adults to peers or siblings in the family followed by a shift back to adults in their roles as teachers in the classroom. Moreover, such a two-phase sequence may be especially characteristic of children from economically disadvantaged families where caretaking and other socialization functions are especially likely to be allocated to older siblings. Of course, further research is needed to test these interpretations.

Table 27

Component Transformation Correlations in Younger Girls

Component Measures	No.	Child-Directed Component							
		Affiliation		Information Seeking		Attachment		Recognition Seeking	
		$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$	$F_1 \to S$	$S \to F_1$
Affiliation-Adult	11a	.34	.18	.19	.07	.25	-.01	.11	.06
Information Seeking-Adult	11b	.24	.07	.11	.04	.21	-.12	.07	-.06
Attachment-Adult	11c	.18	.13	.07	.09	.20	.16	-.08	.04
Recognition Seeking-Adult	11d	.18	.02	-.02	-.12	.06	-.11	.00	-.09
Affiliation-Child	12a	.37*	.37*	.24	.18	.15	.16	.09	.18
Information Seeking-Child	12b	.18	.24	.26*	.26*	.12	.11	.16	.02
Attachment-Child	12c	.16	.15	.11	.12	.13*	.13*	.09	-.02
Recognition Seeking-Child	12d	.18	.09	.02	.16	-.02	.09	.03*	.03*

*Stability Coefficient

Note.--Column headings define the component measures and kind of temporal correlations. $F_1 \to S$ signifies correlation of the child-directed component measured in Fall_1 with components measured in the Spring. $S \to F_1$ signifies correlation of the child-directed component measured in the Spring with components measured in Fall_1.

Table 28

Transformation Correlations for the Affiliation Component

in Three Subgroups

Component Measures	No.	Affiliation-Child					
		Younger Boys		Older Boys		Older Girls	
		$F_1 \rightarrow S$	$S \rightarrow F_1$	$F_1 \rightarrow S$	$S \rightarrow F_1$	$F_1 \rightarrow S$	$S \rightarrow F_1$
Affiliation-Adult	11a	.24	.13	.38	.10	.14	.15
Affiliation-Child	12a	.16*	.16*	.34*	.34*	.36*	.36*

*Stability Coefficient

Note.--Column headings define the subgroup and kind of temporal correlations. $F_1 \rightarrow S$ signifies correlation of the child-directed component measured in Fall_1 with components measured in the Spring. $S \rightarrow F_1$ signifies correlation of the child-directed component measured in the Spring with components measured in Fall_1.

Table 29

Component Transformation Correlations for Social Control-Child

Component Measures	No.	Social Control-Child							
		Younger Boys		Older Boys		Younger Girls		Older Girls	
		$F_1 \rightarrow S$	$S \rightarrow F_1$	$F_1 \rightarrow S$	$S \rightarrow F_1$	$F_1 \rightarrow S$	$S \rightarrow F_1$	$F_1 \rightarrow S$	$S \rightarrow F_1$
Affiliation-Adult	11a	.07	.24	.35	-.02	.20	.13	.17	.14
Information Seeking-Adult	11b	.02	.18	.08	-.01	.12	.06	.07	.12
Attachment-Adult	11c	.00	.11	.10	.09	.07	-.01	-.02	.07
Recognition Seeking-Adult	11d	.06	.15	-.06	-.09	.03	.06	-.01	.01
Social Control-Adult	11e	-.07	.12	.08	.10	-.04	.06	.12	-.08
Affiliation-Child	12a	.15	.21	.10	.18	.20	.15	.07	.24
Information Seeking-Child	12b	.13	.10	.09	.07	.24	.12	.05	.03
Attachment-Child	12c	.12	.11	-.11	.05	.12	.05	.04	.14
Recognition Seeking-Child	12d	.10	.12	-.07	.01	.18	.11	-.10	-.06
Social Control-Child	12e	.22*	.22*	.13*	.13*	.11*	.11*	.01*	.01*

*Stability Coefficient

Note.--Column headings define the subgroup and kind of temporal correlations. $F_1 \rightarrow S$ signifies correlation of the child-directed component measured in Fall_1 with components measured in the Spring. $S \rightarrow F_1$ signifies correlation of the child-directed component measured in the Spring with components measured in Fall_1.

Finally, it might be asked whether the same transformation was carried by the component of Social Control. It is important to recall the earlier finding that Social Control directed toward peers was located further along the general developmental pathway on the circumplex than was Social Control directed toward adults, making it unlikely that the same kind of developmental change would occur for this component. Inspection of the fifth row of Table 29 confirms this expectation. However, there was a child-to-adult shift, at least in Older Boys, from Social Control toward peers in the Fall to Affiliation toward adults in the Spring ($r = .35$), reflecting a developmental change both with respect to target and behavioral content on the circumplex. This outcome is reminiscent of a similar transformation found in preschool middle class children (Emmerich, 1964).

Conclusions

Organization of the Personal-Social Domain

Structural findings strongly support the conclusion that preschool personal-social behaviors in predominantly black lower class children can be mapped into a three-space structure defined by the circumplex together with the dimension of Task Vs. Person Orientation. This correlational patterning of the 18 constructs was reasonably invariant across the eight subgroups classified by sex, age at entry into a preschool program, and period of measurement. It also appeared to provide a sufficient framework for interpreting the meanings of remaining Bipolar and Unipolar Scales.

The circumplex ordering replicates previous studies of predominantly white middle class children, but it is less well known from previous research whether the dimension of Task Vs. Person Orientation would be as salient for white middle class children of this age. The pattern of correlations defining the third dimension was consistent and theoretically meaningful, suggesting that it may have been largely overlooked in the past as a primary descriptor of individual differences in young children. Another possibility amenable to empirical test (see below) is that this dimension reflects an especially important basis of variation among the classroom environments sampled in the present investigation, resulting in groupings of children who were task-oriented, person-oriented, or in some instances both.

There was striking and consistent evidence at this age that social behaviors directed toward adults in the classroom are primarily task-oriented and serve achievement motives, whereas social behaviors directed toward other children are primarily person-oriented and serve affiliation motives.

The basic structure proved to be heuristic for interpreting the underlying meanings of both global and molecular behavioral judgments. For example, there was evidence for developmental discontinuity in the meaning of masculinity-femininity. Also, by mapping component measures of Adult and Child Orientation onto the larger structure, theoretically important similarities and differences in the topographies of behaviors directed toward adult and child targets were clearly revealed.

It is clear that a precise understanding of the child's behavior in the classroom requires a description in terms of multiple constructs. The need for such a profile is seen especially from the finding of a curvilinear relationship between the extent of involvement in classroom activities and polarization of individuals along the third dimension.

Structural-Developmental Model

The ordering of constructs suggested a developmental model of personality change. Generally it was expected that major developmental shifts would occur along the pathway from constructs signifying introversion to those signifying greater extroversion. As the child becomes more outgoing within the classroom a variety of alternative routes become available which are defined by the circumplex and the dimension of Task Vs. Person Orientation. Together with certain assumptions concerning broad social norms and sex typing, this developmental model proved to be very useful in interpreting patterns of mean differences among sex, age at entry, and period subgroups. It also provided a systematic basis for explaining Fall_1 X Spring developmental transformations within subgroups.

The present structure thus proved to be more than just a multivariate description of personal-social "states" measured at a given point in time, since the principle of structural proximity (Foa, 1968) had explanatory power with regard to developmental change. Laymen and psychologists alike have persisted in the belief that the direction and extent of personality change is partially determined by the individual's personality characteristics prior to change, but there have been few empirical demonstrations that such a belief is warranted. It is therefore of particular interest that the present structural-developmental model helped account for personality changes revealed both in the subgroup comparisons and in the transformational analyses within subgroups.

It remains an open question whether similar patterns of developmental change would be found in middle class children. Our hypothesis is that the same basic developmental model would be applicable to middle class children, perhaps especially at a younger age. While the relevant norms probably do not exist, it is our impression that middle class children within the age range of the present sample typically are located further along the major developmental pathway.

Methodological Implications

Beyond its utility for organizing the personal-social domain, the present structure also proved to be illuminating with regard to the impact of sex of child, age of entry into preschool, period of measurement, and their interactions. In many instances a specific source of variance on the independent variable side resulted in a "spread of effect" (Foa, 1968) among the ordered personal-social constructs. As stated by Foa: "When the effect of the experimental treatment is observed on a set of ordered variables, it may be predicted that the change will be maximal for a given variable, less strong for the variables in proximity to the first one, and still less so for variables further remote from it" (Foa, 1968, p. 463).

The importance of preserving the natural ordering of personal-social constructs is seen in the remarkable sensitivity of the present analyses to the differential impact of certain independent variables. For example, despite the fact that Compliant and Submissive were adjacent constructs on the circumplex, they were clearly influenced by different sources of variance on the independent variable side (Tables 14 and 18). Moreover, there were important instances when presumed "opposites" on the circumplex were not influenced by the same sources of variance, indicating that bipolar social behaviors are not necessarily under the control of the same processes. These outcomes indicate that structural methodologies in general and factor analysis in particular need to become increasingly sensitive to detecting and preserving natural orderings among constructs within the personal-social domain.

There was evidence that simultaneous assessment of personal-social constructs distributed throughout the domain leads to multiple predictions which improve upon univariate predictions. Systematic developmental transformations as well as systematic personality x situation variance were believed to provide the underpinnings for this phenomenon. The present findings were limited to the special case where repeated measures were taken over a brief time span, but the same phenomenon might well arise when predicting to (or from) measures in other domains. Of course, it remains unknown whether this effect would be increased or decreased when measures are based upon more than a single sampling of the child's behaviors within age periods.

Implications for Educational Programs

The present study does not constitute an evaluation of early educational programs for the disadvantaged. Comparable ratings were not collected on disadvantaged children not in programs during 1969-70, and there is no middle class control group. Moreover, it remains for future studies to determine whether subgroup differences and transformations within subgroups take on a different pattern when independent variables associated with the child's home experiences and classroom environment are considered. However, the present findings do provide some initial clues on the impact of these programs, taken as a whole.

There were demonstrable global changes during the year, most of which were in a direction consistent with accepted socialization goals for children of this age. Subjects generally became increasingly involved in appropriate ways with tasks, adults, and peers. This general trend was particularly accelerated toward the middle of the first semester, indicating that many children adapted effectively to the basic requirements of a preschool environment within a reasonable period of time.

There were also marked individual differences in development during this period. As with the total group of children, most subgroup changes and transformations within subgroups occurred in desirable directions. However, the findings were complex, making it difficult to arrive at general recommendations for programs. These complexities arose not only from subtle interactions on the independent variable side, but also from the fact that multiple behavioral outcomes were differentially related to the independent variables. For example, younger girls developed the most with regard to cooperativeness and compliance, but some exhibited more defiance-hostility than older girls. Also, relative to their older peers, younger children tended to remain more submissive (and to engage in less cognitive activity) throughout the year, but some younger children did increasingly engage in more active interpersonal relations.

Sex differences on the Task Vs. Person Orientation dimension were marked. Girls were more oriented toward task accomplishments in conjunction with adult-oriented relationships, whereas boys were less achievement-oriented and interacted more with peers. Since person-oriented children were quite likely to exhibit rather complex patterns of interpersonal relations, including role taking, it is not altogether clear that a deficit interpretation adequately characterizes this contrast, at least at this age. Nevertheless, further attention needs to be given to the deficit hypothesis with regard to this sex difference.

The findings indicate that while certain behaviors develop in a cumulative fashion, the course of social development is often curvilinear (e.g., increase followed by a decrease). For example, there was tentative evidence that the rapid growth of Autonomous Achievement within the Fall tended to level off in the Spring, even decreasing in older children. At one level, such an outcome appears to complicate the problem of evaluation, since we cannot rely simply upon linear changes to signify increasing personal-social maturity. On the other hand, findings of this type are rather congenial to stage theories of ego development (Emmerich, 1968a, 1969a; Kohlberg, 1969; Loevinger, 1966). Moreover, the present structural-developmental model provides a framework for assessing these changes. For example, it is clear that the child who is neither task- nor person-oriented is less mature than one who is either of these, but it is also likely that the most socially mature child is both task- and person-oriented. Future analyses of the possible "accelerating" effects of certain home and classroom influences could lead to a more precise classification of individual profiles among the 18 construct measures in terms of personal-social maturity level.

System of Personal-Social Measurement

The present instrument and measurement strategy were reasonably successful in achieving this study's aims. From the standpoint of optimal measurement, an extensive series of methodological studies would be required, of course, to disentangle critical from less important features of the procedures.

Moreover, measurement procedures adopted in any particular study would be tailored to that study's particular aims. Nevertheless, it may be useful to summarize likely strengths and weaknesses of the present measurement system.

Regarding possible strengths, we call attention to the following aspects of the present system of measurement: (1) Assessment in a setting where systematic environmental presses are not likely to overwhelm individual differences. (2) Simultaneous measurement of a comprehensive set of personal-social constructs. (3) Simultaneous measurement of multiple indicators of the same presumed constructs. (4) Inclusion of both specific (defined) and broad (undefined) behavioral categories, with judgments on the former preceding judgments on the latter. (5) Implementation of a continuous self-correcting feedback procedure in applying category definitions. (6) Assessment of interrater reliabilities throughout the study. (7) Use of consensus ratings as primary data. (8) Close continuous monitoring of data collection in the field. (9) Intensive training prior to data collection. (10) Selection of judges who meet performance criteria at the completion of training.

For the purpose of making comparisons among subgroups thought to differ in mean level, a single 30-minute observation proved to be satisfactory though not optimal. In order to even approach optimal measurement of individual differences within subgroups, however, our hunch is that at least three and perhaps more independent ratings need to be collected and summed within a short time span.

It would be desirable to reduce the total number of judgments required of raters, although there were no obvious indications that the sheer magnitude of the rating task diminished measurement accuracy. Inspection of Appendix E suggests that eliminating a scale on the basis of relatively low interrater reliability would not be an easy judgment to make, and could result in arbitrary exclusions. More definite recommendations can be made to exclude Bipolar Scales whose meanings varied across sites and Unipolar Scales having low frequencies within subgroups. Such exclusions were noted earlier and also are indicated in Appendix G. However, even here judgment should be exercised since present base rate frequencies may not be representative of other child populations.

The present study revealed the importance of including many Unipolar Scales (behavioral cues) which contribute unique as well as shared variance to each of the 10 circumplex constructs derived from the Bipolar Scales. This selection process would be facilitated by inspecting the circumplex correlates of Unipolar Scales given in Appendix G. Also, new Unipolar Scales might be defined in order to provide additional behavioral cues for certain constructs on the circumplex.

The structural findings suggest that the present set of Bipolar Scales could be improved as follows. (1) Certain scales can be redefined to provide an even better match with the circumplex model. (2) A scale signifying "emotional-demanding" behavior might be added in order to better match the circumplex model of Becker and Krug (1964). (3) Since "opposite" behaviors on the circumplex were found in some instances to be influenced by different processes, opposite poles on scales should be assessed independently. For example, the present scale of Rebellious-Compliant (B.P. 4) could be split into two unipolar scales of Rebellious and Compliant.

Implications for Future Studies

The present study provides a reasonably complete set of personal-social constructs and individual child measures which can be related in future work to antecedent, concurrent, and subsequent processes measured in the larger longitudinal study. Since the essential relationships among personal-social constructs have been established in the present study, and since a reasonably explicit developmental model of personality change has been formulated here, it should be possible to carry out future analyses in a highly systematic fashion.

The following questions would seem to be of special relevance for future analyses which relate the present personal-social measures to first and second year data from the larger longitudinal study. (1) How do variations in maternal beliefs, attitudes, and mother-child relationships influence child personal-social behaviors in the classroom? (2) How do variations in teacher beliefs, attitudes, classroom atmospheres, and teacher-child relationships influence child personal-social behaviors? (3) Does the extent and nature of the match between maternal and teacher characteristics determine the child's personal-social behavior in the classroom? More specifically, do affective and instructional style characteristics of mothers and teachers interact to produce effects differing from those predicted simply by adding the maternal and teacher effects found in "1" and "2" above? (4) Are the above relationships moderated by such factors as the child's sex, age at entry, and period of measurement (Fall Vs. Spring)? (5) When such factors as maternal and teacher characteristics are used in conjunction with child sex and age of entry to classify subgroups, what happens to Fall X Spring stabilities and transformations? A guiding hypothesis here would be that as more (significant) variance attributable to group factors is removed by means of the above subdivisions, individual-difference stability and transformation correlations within groups will reveal increasingly precise differential patterns of personality change during the academic year. (6) What are the relationships between personal-social behaviors in the classroom and cognitive, stylistic, and personality variables assessed independently by means of test instruments? (7) Are relationships between test variables and personal-social classroom behaviors moderated by such factors as the child's sex, age at entry, classroom atmosphere, and period of measurement (Fall Vs. Spring)? (8) Do specific abilities and styles assessed by means of test instruments relate to personal-social behaviors, and how do such relationships differ from those for more general indexes of cognitive maturity?

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APPENDIX A

Rating Format

OBSERVER RATINGS OF CHILDREN

CHILD__________________________________ M F ______ CODE__________

TEACHER____ CODE__________

OBSERVER____ CODE__________

CO-OBSERVER______________________________________ CODE__________

DATE______________ TIME OBSERVATION BEGUN_____ COMPLETED______
Year Month Day

Scale: 0 = Attribute totally absent during period of observation
1 = Attribute occasionally present during period of observation
2 = Attribute frequently present during period of observation
3 = Attribute continually present during period of observation

_____ 1. Seeks physical affection from adult
_____ 2. Seeks physical affection from other child
_____ 3. Seeks help or guidance from adult
_____ 4. Seeks help or guidance from other child
_____ 5. Seeks physical proximity of adult
_____ 6. Seeks physical proximity of other child
_____ 7. Seeks attention from adult through positive bid
_____ 8. Seeks attention from other child through positive bid
_____ 9. Seeks attention from adult through deliberate negative bid
_____10. Seeks attention from other child through deliberate negative bid
_____11. Seeks attention from adult through weak bid
_____12. Seeks attention from other child through weak bid
_____13. Seeks praise or approval from adult
_____14. Seeks praise or approval from other child
_____15. Seeks evaluation from adult
_____16. Seeks evaluation from other child
_____17. Seeks or makes a comparative evaluation
_____18. Demanding of adult
_____19. Demanding of other child
_____20. Tries to get adult to do what self is expected to do
_____21. Tries to get other child to do what self is expected to do
_____22. Exhibits helplessness
_____23. Rejects positive bid from adult
_____24. Rejects positive bid from other child
_____25. Seeks adult's permission to do something
_____26. Seeks permission of other child to do something
_____27. Conforms to routine or routine request of adult
_____28. Conforms to routine or routine request of other child
_____29. Rejects reasonable request of adult
_____30. Rejects reasonable request of other child
_____31. Engages in complementary behavior

COMMENTS

_____32. Engages in parallel activity
_____33. Exhibits interest in or concern for other in distress
_____34. Praises or expresses approval toward adult
_____35. Praises or expresses approval toward other child
_____36. Expresses criticism of adult
_____37. Expresses criticism of other child
_____38. Reciprocates with adult
_____39. Reciprocates with other child
_____40. Tries to "make up" with adult
_____41. Tries to "make up" with other child
_____42. Friendly toward adult
_____43. Friendly toward other child
_____44. Nurturant toward adult
_____45. Nurturant toward other child
_____46. Exhibits leadership
_____47. Behaves competitively
_____48. Seeks leadership of adult
_____49. Seeks leadership of other child
_____50. Smiles and/or laughs
_____51. Engages in gross motor activity
_____52. Engages in fine manipulative activity
_____53. Engages in cognitive activity
_____54. Engages in fantasy activity
_____55. Engages in artistic activity
_____56. Concerned with satisfaction of physical need
_____57. Takes initiative in carrying out own activity
_____58. Tries to pursue difficult task
_____59. Attempts to overcome obstacles by himself
_____60. Exhibits persistence
_____61. Completes activity by himself
_____62. Gets intrinsic satisfaction from activity or task
_____63. Praises self
_____64. Threatens to act aggressively toward adult
_____65. Threatens to act aggressively toward other child
_____66. Possessive
_____67. Verbally aggressive toward adult
_____68. Verbally aggressive toward other child
_____69. Bosses adult
_____70. Bosses other child
_____71. Physically aggressive toward adult
_____72. Physically aggressive toward other child
_____73. Deliberately aggressive toward property
_____74. Expresses negative feeling about self, possession, or own product
_____75. Exhibits visual curiosity

Scale:

0 = Attribute totally absent
1 = Attribute occasionally present
2 = Attribute frequently present
3 = Attribute continually present

_____76. Exhibits active curiosity
_____77. Seeks information from adult
_____78. Seeks information from other child
_____79. Responsive to teaching by adult
_____80. Responsive to teaching by other child
_____81. Imitates behavior of adult
_____82. Imitates behavior of other child
_____83. Instructs or demonstrates
_____84. Attempts to communicate verbally to adult
_____85. Attempts to communicate verbally to other child
_____86. Communicates meaningful complex idea to other child
_____87. Communicates meaningful complex idea to adult
_____88. Verbally loud
_____89. Talks to self
_____90. Difficult to understand
_____91. Does not concentrate on activity
_____92. Inattentive when adult communicates to him
_____93. Inattentive when other child communicates to him
_____94. Incomplete communicative act
_____95. Exhibits goal-directed activity
_____96. Shows planning in pursuing activity
_____97. Flexible in substituting goal
_____98. Corrects or modifies performance to meet own standard
_____99. Products or activities have common theme
_____100. Perseverates on activity or task
_____101. Perseverates verbally
_____102. Preoccupied with own thoughts
_____103. Unable to tolerate delay
_____104. Concerned about physical discomfort or physical danger
_____105. Seeks verbal reassurance
_____106. Hesitant in relating to adult
_____107. Hesitant in relating to child
_____108. Hesitant to try things on his own
_____109. Unusually good physical coordination
_____110. Poor physical coordination
_____111. Restlessness
_____112. Easily frustrated or threatened by adults
_____113. Easily frustrated or threatened by other children
_____114. Recovers quickly from frustration or threat
_____115. Response to frustration or threat: becomes stubborn
_____116. Response to frustration or threat: becomes fearful
_____117. Response to frustration or threat: cries
_____118. Response to frustration or threat: becomes dejected

_____119. Response to frustration or threat: becomes defiant, rebellious

_____120. Response to frustration or threat: increased quietness

_____121. Response to frustration or threat: increased activity that seems aimless

_____122. Response to frustration or threat: seeks comfort from adult

_____123. Response to frustration or threat: seeks comfort from other child

_____124. Response to frustration or threat: retaliates against person who caused frustration

_____125. Response to frustration or threat: ignores the frustration or threat

_____126. Response to frustration or threat: effectively defends self

_____127. Response to frustration or threat: becomes angry

BIPOLAR SCALES

1	2	3	4	5	6	7
Extremely X	Considerably X	Slightly More X Than Y	X No More Than Y	Slightly Y	Considerably Y	Extremely Y

	X								Y
1.	Withdrawn	1	2	3	4	5	6	7	Involved
2.	Masculine	1	2	3	4	5	6	7	Feminine
3.	Tolerates Frustration	1	2	3	4	5	6	7	Vulnerable to Frustration
4.	Rebellious	1	2	3	4	5	6	7	Compliant
5.	Expressive	1	2	3	4	5	6	7	Restrained
6.	Tense	1	2	3	4	5	6	7	Relaxed
7.	Sensitive to Others	1	2	3	4	5	6	7	Self-centered
8.	Submissive	1	2	3	4	5	6	7	Dominant
9.	Active	1	2	3	4	5	6	7	Passive
10.	Apathetic	1	2	3	4	5	6	7	Energetic
11.	Stable	1	2	3	4	5	6	7	Unstable
12.	Solitary	1	2	3	4	5	6	7	Social
13.	Assertive, Bold	1	2	3	4	5	6	7	Timid, Fearful
14.	Dependent	1	2	3	4	5	6	7	Independent
15.	Constructive	1	2	3	4	5	6	7	Destructive
16.	Aimless	1	2	3	4	5	6	7	Purposeful
17.	Academically Motivated	1	2	3	4	5	6	7	Otherwise Motivated
18.	Aggressive Toward Others	1	2	3	4	5	6	7	Affectionate Toward Others
19.	Socially Secure	1	2	3	4	5	6	7	Socially Insecure
20.	Rigid	1	2	3	4	5	6	7	Flexible
21.	Happy	1	2	3	4	5	6	7	Unhappy

APPENDIX B

Manual of Scale Definitions and Examples

Walter Emmerich

and

Gita Wilder

January 20, 1969

Attribute: 1. Seeks physical affection from adult

2. Seeks physical affection from other child

Definition: Actively seeks physical affection from another.

Examples: (a) Child hangs onto teacher.

(b) Child goes to teacher and clearly wants to be picked up or hugged.

(c) Child seeks to hold teacher's hand.

(d) Target child hangs onto another child.

Qualifications: Merely being receptive to affection initiated by other is not included here.

Attribute: 3. Seeks help or guidance from adult

4. Seeks help or guidance from other child

Definition: Seeks help, guidance, or assistance from other.

Examples: (a) Asks teacher to get play materials off high shelf.

(b) Seeks teacher's help in protecting self from other child's aggression.

(c) Asks another child what he should do next.

Qualifications: Merely accepting help initiated by other is not included here.

Attribute: 5. Seeks physical proximity of adult

6. Seeks physical proximity of other child

Definition: Active attempt to be near another child or teacher.

Examples: (a) Target child follows another child from activity to activity.

(b) Stays near teacher, following her when she moves.

(c) "I want to sit next to Eric."

Qualifications:

Attribute: 7. Seeks attention from adult through positive bid

8. Seeks attention from other child through positive bid

Definition: Active attention-seeking expressed in a positive manner. Attempt is to attract the attention of other toward self, possession, product, or act.

Examples: (a) "Look at what I made, teacher."

(b) Shows something to other child, and expects a response.

(c) "Watch me, teacher."

Qualifications: Unsuccessful as well as successful bids for attention are rated.

Attribute: 9. Seeks attention from adult through deliberate negative bid

10. Seeks attention from other child through deliberate negative bid

Definition: Acts negatively to draw attention of other to self.

Examples: (a) Deliberately runs tricycle into a group to gain their attention.

(b) Child stamps feet loudly during a time of relative quiet in classroom.

(c) Child repeatedly does something he knows annoys other.

Qualifications: Negative attention-seeking is likely to result in scolding, censure, or discipline from another, but a rating is made even when the other does not respond, or responds positively to the child.

Attribute: 11. Seeks attention from adult through weak bid

12. Seeks attention from other child through weak bid

Definition: Mild or incomplete attempts to secure the attention of other. These can be positive, negative, or neutral bids. These attempts will often be unsuccessful in drawing attention because they are too weak.

Examples:

(a) Child holds picture up, and waits to be noticed by teacher or other child.

(b) Child's attention-seeking comment is made too softly to be noticed by teacher, and no attempt is made to make a stronger bid.

(c) A negative attention-seeking bid is started but stopped before it is carried out to completion.

Qualifications:

Attribute: 13. Seeks praise or approval from adult

14. Seeks praise or approval from other child

Definition: Child actively seeks indication that other likes him, his possession, his product, or his act.

Examples:

(a) Child asks, "Do you like this design?", pointing to a block design he has just made.

(b) Child makes a special effort to do something that other has indicated or implied will receive approval.

(c) Child asks another child, "Do you like this picture?", indicating a picture he has just made.

Qualifications: More than mere attention of the other is sought. Make this rating only if praise, approval, or expression of liking or admiration is clearly sought.

Attribute: 15. Seeks evaluation from adult

16. Seeks evaluation from other child

Definition: Child seeks an evaluation of self, possession, product, or act in relation to a standard.

Examples: (a) Child shows painting to teacher and asks, "Is this right?"

(b) Child trying puzzle asks teacher, "Is that the way it goes?"

(c) Child shows painting to another child and says, "Is this pretty?"

Qualifications: More than attention or approval is sought. Make this rating only if the child wants the other to apply a standard of evaluation. One sign of this behavior is that the child seems receptive to criticism.

Attribute: 17. Seeks or makes a comparative evaluation

Definition: Child seeks or makes a comparative judgment about himself, possession, product, or act. He may compare himself with another, compare two others, or compare his own earlier performance with a more recent performance.

Examples: (a) "Is my tower taller than Craig's?"

(b) "I'm stronger today."

(c) "Patricia is prettier than Louise."

Qualifications:

Attribute: 18. Demanding of adult

19. Demanding of other child

Definition: Child insists that other meet his request.

Examples:

(a) Child insists loudly and repeatedly that teacher meet his request.

(b) Child asks teacher for special privileges.

(c) Target child orders another child to do something that benefits target child.

Qualifications:

Attribute: 20. Tries to get adult to do what self is expected to do.

21. Tries to get other child to do what self is expected to do.

Definition: When other suggests or requests something of target child, he tries to get other to carry out the suggestion.

Examples:

(a) Told by teacher to put doll carriage in doll corner, target child tells teacher to do it.

(b) Target child asks another child to put away crayons that target child has been using.

(c) When asked by the teacher to put away blocks she has been using, target child says, "John took them out."

Qualifications:

Attribute: 22. Exhibits helplessness

Definition: Child is passive or ineffective in making needs known to other. Child's goal may be to be cared for, comforted, helped, or given attention, but he makes few or ineffective efforts to communicate these needs.

Examples:

(a) Child stands in front of activity shelf for some time without choosing activity or making desire known to teacher.

(b) Child seems unable to start an activity suggested by teacher.

(c) Child seems thwarted in some activity, but neither tries to overcome difficulty by self nor seeks other's help.

Qualifications:

Attribute: 23. Rejects positive bid from adult

24. Rejects positive bid from other child

Definition: Active rejection of positive attention or help from another.

Examples:

(a) Turns away from teacher who puts arm around child and tries to say something to child.

(b) Child refuses assistance of teacher.

(c) Crying child rejects comforting attempts by other child.

Qualifications:

Attribute: 25. Seeks adult's permission to do something

26. Seeks permission of other child to do something

Definition: Child asks teacher or other child for permission to do something or to engage in activity.

Examples:

(a) "Can I paint now?"

(b) Child asks teacher if he can take out the blocks.

(c) "Is it my turn now to throw the ball?"

(d) Child asks another child if he can use one of his blocks.

Qualifications:

Attribute: 27. Conforms to routine or routine request of adult

28. Conforms to routine or routine request of other child

Definition: Child responds in accordance with accepted classroom routine or routine requests made by other.

Examples:

(a) Asked to put his painting on the shelf, child does so.

(b) Spontaneously follows a classroom routine; e.g., putting away materials after using them.

(c) Asked by another child to back tricycle out of way, child does so.

Qualifications: What is "routine" may vary among classrooms. This rating applies only when a routine procedure or request is implied.

Attribute: 29. Rejects reasonable request of adult

30. Rejects reasonable request of other child

Definition: Child refuses to act in accordance with reasonable request made by teacher or other child.

Examples:

(a) Asked by teacher to return crayons to the shelf, target child says "No".

(b) Asked by teacher to stop painting and wash his hands, target child continues to paint.

(c) Asked by teacher to move his wagon away from the direction of the children, target child moves wagon towards the children.

(d) Asked by another child to move out of the way, target child stays where he is.

Qualifications:

Attribute: 31. Engages in complementary behavior

Definition: Child coordinates his own activity to supplement and facilitate a common activity shared by one or more others. Genuinely cooperative activity.

Examples:

(a) Target child builds one part of block structure while another child builds other part.

(b) Several children (including target child) participate in "playing house" or other dramatic games in which each child plays a different role.

(c) Coordination of activity occurs, such as in see-sawing, pushing and receiving a ball, etc.

Qualifications:

Attribute: 32. Engages in parallel activity

Definition: Child engages in same activity as other who is nearby, but their activity is independent, with no mutual coordination.

Examples:

(a) Target child builds blocks by himself, with another child using blocks nearby.

(b) Child rides a tricycle in tandem with other.

(c) Child plays with dolls, but no effort is made to coordinate role playing with other children who also are playing with dolls.

Qualifications:

Attribute: 33. Exhibits interest in or concern for other in distress

Definition: When another child exhibits distress of some sort, target child shows interest, concern, or sympathy.

Examples:

(a) Child looks at crying child.

(b) Child approaches a crying child and asks, "What's the matter?"

(c) Child approaches a crying child and offers him a toy.

Qualifications:

Attribute:	34. Praises or expresses approval toward adult 35. Praises or expresses approval toward other child
Definition:	Child expresses praise or approval of other, either verbally or through gestures.
Examples:	(a) "You're a good boy, Eric." (b) "Jane made a nice road." (c) Child pats other on back to indicate approval.
Qualifications:	

Attribute:	36. Expresses criticism of adult 37. Expresses criticism of other child
Definition:	Child critically evaluates other. The criticism is more self-protective or constructive than aggressive.
Examples:	(a) "You should use the green paint in your picture." (b) "Don't run into me." (c) "You're not supposed to do that."
Qualifications:	

Attribute: 38. Reciprocates with adult

39. Reciprocates with other child

Definition: An exchange of favors with another.

Examples:

(a) Child pulls another in wagon after other pulls target child in wagon.

(b) "If you help me pick up blocks, I'll help you put away dishes."

(c) Child helps other button smock after other has helped target child.

Qualifications:

Attribute: 40. Tries to "make up" with adult

41. Tries to "make up" with other child

Definition: Child attempts to "make up" with other after behaving in disapproved manner.

Examples:

(a) Child bumps table, knocking another child's puzzle to floor. Target child then helps other child pick up pieces.

(b) Child refuses to meet teacher's request. Minutes later, he makes a special effort to please teacher.

(c) Child tries to comfort another whom he has made cry.

Qualifications: The rater must see both the initially disapproved behavior and the "make up" behavior.

Attribute: 42. Friendly toward adult

43. Friendly toward other child

Definition: Affiliative, mutually affectionate, facilitating behavior.

Examples: (a) Two children play together, with exchanges of positive communications and feelings.

(b) Target child makes an outgoing gesture to another by smiling or by saying, "Let's play with the beads."

(c) Child says to other: "You can play with me."

Qualifications: Unlike nurturance, for which benefit of other is primary concern, friendly behavior is affiliative.

Attribute: 44. Nurturant toward adult

45. Nurturant toward other child

Definition: Spontaneous efforts to help, give to, or reassure another.

Examples: (a) Child does something for teacher that is spontaneous and not ordinarily expected.

(b) Child spontaneously gives object to other child.

(c) Child helps other child do something.

Qualifications:

Attribute: 46. Exhibits leadership

Definition: A positive attempt to influence or control the behavior of another.

Examples:

(a) Child initiates a game of ball by throwing ball to another child.

(b) Child says, "Let's play house. You be the father and I'll be the baby."

(c) Child oversees the construction of a block tower by several other children.

Qualifications:

Attribute: 47. Behaves competitively

Definition: Attempts to "outdo" another.

Examples:

(a) Child rides tricycle faster in response to being passed by another child.

(b) Child tries to build block tower higher than another child's.

(c) Competes for teacher's attention.

Qualifications: Competitiveness for resources should be rated as "possessiveness" rather than "competitiveness."

Attribute: 48. Seeks leadership of adult

49. Seeks leadership of other child

Definition: Actively seeks leadership from other.

Examples:

(a) Asks teacher to help him find a new activity.

(b) Follows other child and does what other child does or suggests.

(c)

Qualifications:

Attribute: 50. Smiles and/or laughs

Definition:

Examples: (a)

(b)

(c)

Qualifications:

Attribute: 51. Engages in gross motor activity

Definition:

Examples: (a) Plays with large objects, such as large blocks, trucks.

(b) Engages in activities requiring physical strength, such as pulling heavy objects.

(c) Runs hard.

Qualifications:

Attribute: 52. Engages in fine manipulative activity

Definition: Interested in activities requiring finger-and-hand dexterity and eye-hand coordination. Includes peg boards, puzzles, beads, small block designs, and stacking and nesting toys.

Examples: (a)

(b)

(c)

Qualifications:

Attribute: 53. Engages in cognitive activity

Definition: Includes working or playing with numbers, letters, words; "reading a book"; writing one's name; exploring nature; talking about an experience or asking questions for the purpose of better understanding experience.

Examples: (a)

(b)

(c)

Qualifications:

Attribute: 54. Engages in fantasy activity

Definition: Engages in "make believe" behavior.

Examples: (a) Plays role of parent in doll play.

(b) Dresses up and/or acts like an animal.

(c) "Look, I'm Batman."

Qualifications:

Attribute: 55. Engages in artistic activity

Definition: Use of expressive media, such as crayons, finger or brush painting, work with clay or paper mache, musical instruments, etc.

Examples: (a)

(b)

(c)

Qualifications:

Attribute: 56. Concerned with satisfaction of physical need

Definition: Child's attention directed toward satisfaction of physical need.

Examples:
(a) Seeks food during periods other than snack time.
(b) Excessively tired; falls asleep.
(c) Sucks thumb.

Qualifications:

Attribute: 57. Takes initiative in carrying out own activity

Definition: Child knows what he wants to do; a "self-starter".

Examples:
(a) A child works on several puzzles, returning each when he is finished, and choosing another.
(b) A child becomes engaged in a series of activities without any apparent direction from the teacher.
(c) After completing an activity, child easily finds another activity.

Qualifications:

Attribute: 58. Tries to pursue difficult task.

Definition: Child attempts to do something that is difficult. Signs of difficulty include (a) inability to perform the task quickly, (b) need to mobilize effort, (c) need to figure something out in order to accomplish task.

Examples:
(a)
(b)
(c)

Qualifications: Child need not be successful with task in order to receive this rating.

Attribute:	59. Attempts to overcome obstacle by himself
Definition:	When in the course of an activity the child faces some obstacle, he tries to overcome the obstacle by himself. An "obstacle" here refers to something blocking the activity that is not caused deliberately by another.
Examples:	(a) When a tool is missing that he needs, he tries to find it without asking or disrupting others. (b) When a piece of a puzzle is missing, the child searches for it. (c) When a piece of furniture is in his way, the child moves the furniture.
Qualifications:	

Attribute:	60. Exhibits persistence
Definition:	Sticks to a task or course of action despite distractions or interference.
Examples:	(a) Child works at a puzzle despite interesting distractions that might command his attention or interest. (b) Child returns to building with blocks repeatedly after interruptions. (c) Child returns to painting a picture after noticing another interesting activity occurring next to him.
Qualifications:	In order to rate here, a distraction or interference must occur with subsequent persistence by child.

Attribute: 61. Completes activity by himself

Definition: Once a task is begun, the child carries it out to completion without requiring encouragement or help from other.

Examples:

(a) Child works on a puzzle and completes the puzzle without seeking help.

(b) At the teacher's suggestion, the child starts to paint a picture. He works at the picture without seeking further encouragement from the teacher.

(c)

Qualifications:

Attribute: 62. Gets intrinsic satisfaction from activity or task

Definition: Child appears to enjoy activity or task for its own sake. Signs of intrinsic satisfaction are (a) wholehearted involvement and concentration on activity; (b) child expresses positive feelings while engaging in activity.

Examples:

(a) Child is completely absorbed in painting a picture.

(b) Girl sits in corner rocking a doll, singing to self.

(c) Boy kicks ball along whistling.

Qualifications:

Attribute: 63. Praises self

Definition: Child expresses positive self regard.

Examples:

(a) "I'm a good boy."

(b) "I'm strong."

(c) "I look pretty today."

Qualifications: This rating is an affirmation of self regard, not an attempt to elicit praise or approval from other.

Attribute: 64. Threatens to act aggressively toward adult

65. Threatens to act aggressively toward other child

Definition: Child threatens other with physical aggression. May be a verbal or gestural threat.

Examples: (a) "Stop doing that or I'll hit you."

(b) Child shakes fist at other, but stops short of physical contact.

(c)

Qualifications:

Attribute: 66. Possessive

Definition: Possessive attitude toward an object or resource.

Examples: (a) Child is unwilling to share or give up something in his possession.

(b) Child attempts forcefully to secure an object that is in another's possession.

(c) Child protects own block structure from all comers.

Qualifications:

Attribute: 67. Verbally aggressive toward adult

68. Verbally aggressive toward other child

Definition: A remark that expresses hostility, derogation, dislike, or rejection of other.

Examples: (a) "You're stupid."

(b) "No. I won't play with you. I don't like you."

(c) "Your picture is ugly."

Qualifications:

Attribute: 69. Bosses adult

70. Bosses other child

Definition: A negative (verbal) attempt to influence or control other.

Examples:

(a) Child says to another, "You can't swing now; I have to go first."

(b) Child says to another, "If you won't be the baby, you can't play house with me."

(c) Child says to teacher, "Take these dishes back to the sink right now."

Qualifications:

Attribute: 71. Physically aggressive toward adult

72. Physically aggressive toward other child

Definition: Child actually makes physical contact with other in expressing aggression. Includes hitting, wrestling, kicking, pinching, pushing, biting, spitting, throwing object at another.

Examples:

(a)

(b)

(c)

Qualifications:

Attribute: 73. Deliberately aggressive against property.

Definition: Aggression directed toward objects and property. Includes disruptive throwing of objects, deliberate breaking of things, tearing up things, destroying products that other children have made or are working on.

Examples:

(a)

(b)

(c)

Qualifications:

Attribute: 74. Expresses negative feeling about self, possession, or own product

Definition: A negative, self-depreciating remark.

Examples: (a) "I can't do it."

(b) "Your dress is prettier than mine."

(c) "My painting is no good."

Qualifications:

Attribute: 75. Exhibits visual curiosity

Definition:

Examples: (a) Child looks at ongoing activities in classroom.

(b) Child looks at toys and games on a shelf.

(c) Child is attentive to a new or unusual event in classroom.

Qualifications: Visual curiosity is directed rather than aimless. It need not be accompanied by action, although a child may move from place to place in order to get a clearer view of object of attention.

Attribute: 76. Exhibits active curiosity

Definition: Active interest in a variety of ongoing activities or objects, including manual or verbal exploration.

Examples: (a) Child moves around room and "tries out" a variety of activities.

(b) Child goes to toy shelf and manipulates different toys.

(c) Child asks many questions on a topic.

Qualifications:

Attribute: 77. Seeks information from adult

78. Seeks information from other child

Definition: Asks a question of another child for the purpose of gaining information.

Examples: (a) To another child: "How did you make that house?"

(b) To the teacher: "When will it be Christmas?"

(c) To another child: "How old are you?"

Qualifications:

Attribute: 79. Responsive to teaching by adult

80. Responsive to teaching by other child

Definition: Child attempts to follow another's instructions, to master a skill being taught, or to modify a mistake pointed out by another.

Examples: (a) Child carries out teacher's instructions on how to hold paint brush.

(b) Child practices making a circle with crayon after another child has shown him how.

(c) Teacher shows child how a piece of puzzle is put in the wrong place, and child searches for correct place.

Qualifications: Rate here the child's response to teaching of "subject matter" rather than classroom routines.

Attribute: 81. Imitates behavior of adult

82. Imitates behavior of other child

Definition: The child clearly tries to imitate or copy adult's behavior. By "imitation" is meant behavior that is clearly (a) stimulated by the behavior of the adult, (b) very similar to the behavior of the adult, and (c) occurs soon after the behavior of the adult.

Examples: (a) Child imitates clapping of teacher in game or song.

(b) Child copies a design made by the teacher in a demonstration of finger painting.

(c) Other child says, "I'm a horse." Target child says, "I'm a horse."

Qualifications: Merely following instructions does not qualify as imitation unless these instructions call for imitation of the instructor's behavior.

Attribute: 83. Instructs or demonstrates

Definition: The child tells or shows another how to do something.

Examples: (a) Child shows other how to do puzzle.

(b) "This is how you button your coat" (demonstrates).

(c) Child shows another child where the peg board is.

Qualifications:

Attribute: 84. Attempts to communicate verbally to adult

85. Attempts to communicate verbally to other child

Definition: Uses words and sentences in an effort to communicate with other.

Examples: (a)

(b)

(c)

Qualifications:

Attribute: 86. Communicates meaningful complex idea to other child

87. Communicates meaningful complex idea to adult

Definition: Child communicates a train of thought, or a complicated idea.

Examples: (a) Reports an experience at home in some detail.

(b) Tries to tell other that blocks must be put in a certain sequence in order to build tower.

(c) Engages in fantasy play which incorporates a variety of different roles.

Qualifications: The train of thought or complicated idea may refer to something real or fantasied, but it should have some coherence.

Attribute: 88. Verbally loud

Definition: Makes sounds vocally and perhaps noisily to imitate some sound in nature or to express internal state.

Examples: (a) Shouts "zoom" as he runs around room.

(b) Pretends to shoot a gun, saying, "bang, bang."

(c) Shouts something to get other's attention.

Qualifications: Whether child vocalizes words or sounds, this rating refers to vocalization in the service of expression rather than communication.

Attribute: 89. Talks to self

Definition: Child delivers monologue or addresses remarks to non-human objects.

Examples: (a) "Here's a green wheel and here's another green wheel. I think I'll take another one."

(b) Child says "Get off me" to a piece of string that is clinging to his fingers.

(c) Child asks and answers his own questions. "What color shall I make this house? Red."

Qualifications: In order to make this rating, it should be clear that the child is attempting to communicate to himself rather than to other.

Attribute: 90. Difficult to understand

Definition: Child has difficulty making proper sounds for words, leading to difficulty in understanding.

Examples:

(a)

(b)

(c)

Qualifications: Do not give this rating if child's speech is clear and rater doesn't understand child's vocabulary.

Attribute: 91. Does not concentrate on activity

Definition: An activity or task fails to sustain the child's attention, interest, and effort.

Examples:

(a) Child begins to do puzzle, but leaves it after putting in one piece.

(b) Child flits from one activity to another without becoming involved in any one.

(c) Activity of another child turns child's attention away from picture he is painting, and child never returns to paint picture.

Qualifications:

Attribute: 92. Inattentive when adult communicates to him

93. Inattentive when other child communicates to him

Definition: Does not sustain attention toward other who is attempting to communicate with target child.

Examples:

(a) Target child doesn't seem to listen when teacher instructs or communicates with him.

(b) Attention wanders when teacher is instructing a group of which target child is a member.

(c) Doesn't seem to listen to another child's attempt to communicate with him.

Qualifications:

Attribute: 94. Incomplete communicative act

Definition: Does not bring full attention to bear on other when communicating to other.

Examples:

(a) Child says something presumably directed to teacher, but does not look at teacher while he is saying it.

(b) Answers teacher's question so softly that teacher cannot hear.

(c) Tries to communicate with other without first capturing other's attention.

Qualifications:

Attribute: 95. Exhibits goal-directed activity

Definition: Purposeful activity directed toward specific goal.

Examples:

(a) Begins and completes a drawing.

(b) Makes a structure out of building blocks.

(c) Attempts to put beads on a string.

Qualifications:

Attribute: 96. Shows planning in pursuing activity

Definition: Child approaches activity or task in a careful, orderly, thoughtful manner indicative of planning. Evidence for planning may be seen in

(a) preparatory behavior which makes a task easier, such as putting all pieces of a puzzle face up before putting in the pieces, and

(b) doing things in an orderly sequence.

Qualifications:

Attribute: 97. Flexible in substituting goal

Definition: When a goal is blocked, child readily seeks or accepts a substitute.

Examples:

(a) Child approaching tricycle gets there after another child has taken it. Target child turns to another activity.

(b) Child accepts an alternative task in response to teacher's suggestion.

(c)

Qualifications:

Attribute: 98. Corrects or modifies performance to meet own standard

Definition: Child modifies his behavior, apparently in accordance with his own standard, and without external pressure to do so.

Examples:

(a) After examining his block structure from several angles, child rearranges several blocks.

(b) Saying, "This is a goof," child throws away drawing he has made and starts another.

(c) Child tries several doll dresses on a doll before deciding which she is satisfied with.

Qualifications:

Attribute: 99. Products or activities have common theme

Definition: Despite variation in child's specific activities, his actions and/or products contain a common theme or idea.

Examples:

(a) Child makes engine sounds ("vroom") in moving crayons, truck, and his own body.

(b) Child paints several paintings that differ, but have similar content or form.

(c) Child plays "mother" in a variety of contexts.

Qualifications:

Attribute: 100. Perseverates on activity or task

Definition: Repeated performance of an activity or task beyond the point where the behavior appears to serve any goal beyond repetition itself.

Examples:

(a) Child hammers aimlessly on a peg that is already in the hole as far as it can go.

(b) Stacks and unstacks dishes over and over again.

(c) Paces back and forth.

Qualifications:

Attribute: 101. Perseverates verbally

Definition: Repeated performance of a word or phrase or sentence beyond the point where the behavior appears to serve any goal beyond repetition itself.

Examples:

(a) Repeats a phrase over and over again, without any effort to communicate with other.

(b) Sings part of song over and over again to self.

(c)

Qualifications:

Attribute: 102. Preoccupied with own thoughts.

Definition: Child appears to be responding more to his own thoughts than to external events; daydreaming.

Examples:

(a)

(b)

(c)

Qualifications:

Attribute: 103. Unable to tolerate delay

Definition: Impatience in getting or doing something.

Examples:
(a) Told that he must wait in line and take his turn, child pushes in front of other.

(b) Impulsively does something too quickly to be successful.

(c) Tries to skip steps in doing an activity that calls for an orderly sequence.

Qualifications:

Attribute: 104. Concerned about physical discomfort or physical danger

Definition: Child exhibits concern, fear, or anxiety with regard to physical comfort, pain, or danger.

Examples:
(a) Child is concerned about and "favors" a past injury.

(b) Child expresses concern about his physical safety.

(c) Child complains about a physical discomfort.

Qualifications: The child's concern may be either realistic or unrealistic, and should be rated here in either case.

Attribute: 105. Seeks verbal reassurance

Definition: Seeks reassuring remark or comment from other.

Examples:
(a) "Do you like my picture?"

(b) "Am I doing this right?"

(c) Child starts an activity and hesitates, looking at the teacher as if to seek an expression of reassurance.

Qualifications:

Attribute: 106. Hesitant in relating to adult

107. Hesitant in relating to child

Definition: A tendency to hesitate or to avoid relating to an adult, or to a child or group of children. Hesitancy may occur with shyness or fear, or the child may vacillate between approaching and avoiding the adult.

Examples:
(a)
(b)
(c)

Qualifications:

Attribute: 108. Hesitant to try things on his own

Definition: A tendency to hesitate or to avoid doing things by himself. Hesitancy may occur with excessive cautiousness and fear, or the child may vacillate between approaching and avoiding an activity or task.

Examples:
(a)
(b)
(c)

Qualifications:

Attribute: 109. Unusually good physical coordination

Definition: Child is unusually well coordinated in use of large muscles, in eye-hand coordination, sense of balance, or rhythm.

Examples:
(a)
(b)
(c)

Qualifications:

Attribute: 110. Poor physical coordination

Definition: Child exhibits difficulty in physical coordination, either in use of large muscles or in eye-hand coordination.

Examples: (a)

(b)

(c)

Qualifications:

Attribute: 111. Restlessness

Definition: Does not sit still, fidgets, paces.

Examples: (a)

(b)

(c)

Qualifications:

Attribute: 112. Easily frustrated or threatened by adults

113. Easily frustrated or threatened by other children

Definition: Frustrates easily in response to actual or potential injury, blockage of activity, thwarting by other, or social threat initiated by another.

Examples: (a)

(b)

(c)

Qualifications:

Attribute: 114. Recovers quickly from frustration or threat

Definition: Response to frustration is neither prolonged nor severe. Frustration includes actual or potential injury, blockage of activity, thwarting by other, or social threat initiated by other.

Examples: (a)

(b)

(c)

Qualifications: Quickness of recovery from frustration should be rated independently of how easily the child is frustrated.

Attribute: 115 - 127. Response to frustration or threat

Definition: Frustration includes actual or potential injury, blockage of activity, thwarting by other, or social threat initiated by other.

Examples: (a)

(b)

(c)

Qualifications: Make a rating for all of the following kinds of response to frustration:

115. Becomes stubborn
116. Becomes fearful
117. Cries
118. Becomes dejected
119. Becomes defiant, rebellious
120. Increased quietness
121. Increased activity that seems aimless
122. Seeks comfort from adult
123. Seeks comfort from other child
124. Retaliates against person who caused frustration
125. Ignores the frustration or threat
126. Effectively defends self
127. Becomes angry

APPENDIX C

Rater Recruitment Forms

RATER BACKGROUND INFORMATION

(To be filled in by the local coordinator)

Check site:

____ Lee County
____ Portland
____ St. Louis
____ Trenton

Name ____

Sex ________ Age ______ Marital status: S__M__ Separated/Divorced ______

Highest grade attained ________________

Ages of children (if any) ______________________________

Plans for caring for children during work periods ______________________

____

____

General work experience ______________________________

____

____

Special education, training or experience with young children ________

____

____

____

Other relevant information ______________________________

____

____

____

JUDGMENTS ON POTENTIAL RATERS

(To be filled in by the local coordinator)

Check site:

____ Lee County
____ Portland
____ St. Louis
____ Trenton

Name of candidate rated ____

Rate the candidate on the characteristics listed below, using the following scale:

1. Very low or very weak
2. Moderately low
3. Moderate
4. Moderately high
5. Very high or very strong

___ 1. Conscientious motivation to carry out rating task

___ 2. Ability to arrange time to carry out rating task

___ 3. Experience with young children

___ 4. Potential rapport with teachers and school administrators

___ 5. Verbal skills

___ 6. Ability to work independently

Rank order this candidate in relation to all other candidates:

This candidate is ranked _____ out of a total of _____ candidates.

Is the candidate available from February 1 through May 16?

______ Yes

______ No (Explain)

Name______________________________

Child Behavior Examples

Some of the ways that children behave are listed below. Drawing on your own experience, write several examples of each behavior as it might occur in a young child. (Please take no longer than twenty minutes.)

1. Rebellious behavior:

2. Compliant behavior:

3. Dependent behavior:

4. Independent behavior:

5. Academically motivated behavior:

6. Aggressive behavior:

7. Affectionate behavior:

8. Rigid behavior:

9. Flexible behavior:

10. Purposeful behavior:

APPENDIX D

Observer Ratings of Children

TRAINING AND PROCEDURE MANUAL

October 1969 - June 1970

Walter Emmerich

and

Gita Wilder

I. Overview of Rating Task for Year

A. Purpose

The basic purpose of the ratings is to assess child behaviors in the "natural" setting of the classroom throughout the first year of school in Head Start.

B. Specific Aims

The basic aims of the ratings are listed below. These basic aims represent firm commitments which we must make every effort to meet. These aims will not change during the year, although you should be prepared for possible revisions in procedure, and we welcome your suggestions on how our procedures might be improved to better achieve specific aims.

1. Every child designated an eligible child, in the terms of each site, will be observed and rated. There will be between 15 and 20 children per classroom.

2. The number of designated classrooms will vary among sites, with a maximum of about 15. This means each site will be responsible for ratings on as many as 225 children, but should also be prepared at any time for revised estimates of exact numbers.

3. Ratings are to be made immediately after the observer has watched the designated child.

4. The observation period for each set of ratings on a child will be 30 minutes of continual observation.

5. All observations upon which ratings are based are to be made during "free play" periods in the classroom. Observations are not to be made (1) during periods such as naptime, snacktime, etc.; (2) during periods when the teacher is instructing the class as a group; (3) outdoors.

6. Every set of ratings on a child will be made by both members of a paired observer team.

7. These pairs will observe the child at the same time, but ratings will be made and recorded independently, i.e., without prior communication about the child's behavior.

8. However, immediately after the independent ratings have been recorded (step 7), the paired rater team will discuss all scale disagreements and arrive at agreements on these scales for the child. These consensus ratings also will be recorded. Taken together, items 7 and 8 thus result in three sets of ratings: (1) first rater's independent ratings; (2) second rater's independent ratings; (3) consensus ratings. All three of these sets of ratings are preserved. Ratings made in step 7 should not be changed after the consensus ratings are made.

9. The above procedures will all be carried out twice on each child, with an interval of 7-14 days between paired ratings. Different pairs of raters will make the first and second sets of ratings on each child.

II. Recruiting Trainees

The revised training periods are as follows:

Portland: Sept. 29 or 30 - October 15.
St. Louis: November 10-25.
Trenton: October 6-17.

III. Lining up Practice Classrooms for Training

A. Line up practice classrooms for the training period noted above. Since there is a possibility that training may be extended, try to line up classrooms for an extra week beyond this period.

B. In each site, four classrooms will be needed in the morning, and four in the afternoon. Teachers should be informed that classroom observers will not be present continually, and not necessarily each day.

C. These classrooms cannot be Head Start classes nor other preschool classes in which any tested subjects are enrolled.

D. We suggest Head Start classrooms which are not part of the study, day-care centers, and private nursery schools. Children should be from 3-5 years of age, preferably from disadvantaged backgrounds.

E. For practice purposes, it is desirable but not essential that observations be made during free play. Ask teachers when they would prefer observers to be present. Note that times when children arrive and depart are poor times for observing (either because of the teacher's request or when routines typically are carried out).

F. Inform teachers that no more than two observers will be in the classroom at any one time, but that different pairs of observers will appear at different times.

G. You might also want to inform teachers that our observers will not participate in the Head Start program in any way (e.g., to help manage children or to share a meal). Also, teachers should not expect observers to report to them any information based upon observations or ratings in the classroom.

H. In addition to providing space for training discussions, as covered in a separate communication, the following supplies should be available: (1) a dozen clipboards; (2) several dozen pads of lined paper; (3) several dozen pens. Thirty manuals and 2,000 copies of the rating forms have been sent to your site.

IV. Training Procedures

A. Purposes of Training

1. To familiarize raters with the scales and their definitions, as provided in the Manual.

2. To help raters develop techniques of observing and taking notes in the classroom.

3. To familiarize raters with the classrooms and children.

4. To give raters practice with the rating procedure.

5. To discuss both individually and in groups the practice ratings in order to help trainees learn the scale definitions thoroughly.

6. To provide training in the observer's orientation toward teachers and children (in the role of observer).

7. To evaluate continuously the progress of training for each trainee, both to provide individualized instruction and to help in final selection among trainees.

8. To achieve a high degree of agreement among trainees in ratings made on all scales.

B. Some Principles of Training

1. Rely heavily upon practice observations and group discussions of scale definitions rather than upon formal presentations of scale definitions.

2. Give specific rules of rater classroom behavior: (a) appropriate dress; (b) do not participate in classroom activities, snacks, meals, etc.; (c) no eating or drinking in class; (d) observers should not converse in classroom or within hearing distance of classroom; (e) observe local rules on smoking.

3. Use information gained during early parts of training to determine how to pair observers: (a) When pairing early in training, vary pairings to include many combinations of raters. (b) Later in training, arrange permanent pairs of raters whom you feel will work well together and can learn from each other.

4. Emphasize the importance of establishing good relations with teachers: (a) There should be no more than two observers in the classroom at any time. (b) Respect teachers' requests about times when observers are not welcome. (c) Raters should not distract teachers from their job. (d) Raters should be sensitive to communicating to you any messages concerning classroom availability, special changes in schedule, etc.

5. All observations and ratings are highly confidential. No information about specific children should be given to parents, teachers, Head Start officials, or other unauthorized personnel. If in doubt, requests should be directed to you and then referred to the Technical Director.

6. Instruct trainees to exercise caution in the handling of both blank and completed forms. Neither are to be distributed to unauthorized personnel.

7. All completed forms are to be returned to you when discussion of them has been completed.

8. Try to arrange schedules so that discussions of ratings follow soon after the ratings are made, preferably the same day.

9. Inform trainees that they are not to observe and rate children who are relatives or children of close personal friends.

C. Monitoring of Training

1. A major goal of training is to achieve a high level of agreement within pairs on all scales. This must be achieved before a trainee can be hired as a rater in the study.

2. The Trainer should look over all paired protocols and act as a "moderator" of discussions between raters on disagreements in applications of scales.

3. For their own information, and for use by the Princeton Office, Trainers should fill out records of inter-rater agreement, using forms that will be provided.

4. A representative from the Princeton Office will spend at least one day at each site early in the second week of training. The purposes of this visit are to (a) answer any questions that arise during training; (b) check the level of inter-rater agreement on all trainees; (c) help make final choices among trainees for the study itself; (d) go over the procedures and a schedule for the rating study itself.

D. Characteristics of a Well-Trained Observer-Rater

1. Records classroom observations effectively so that later ratings can be made.

2. Thoroughly understands the scale definitions and differences among scales.

3. Is able to fill out rating form with completeness, and without taking too much time (typically no longer than 30 minutes).

4. Works effectively with paired rater and other project personnel.

5. Behaves appropriately in classroom.

6. Can reach a high level of inter-rater agreement on all scales.

7. Gets places on time, and does not miss days of work. (If unable to work because of factors beyond her control, there must be evidence that the problem is not likely to recur or continue.) Keep in mind that when the study itself begins, most trainees should be at a high level of competence, and, since they will be working in pairs, any absences of one member of a pair will place additional strain on getting the job done within our tight time schedule.

8. Does not give false data; e.g., filling in ratings without first observing the child, and changing the independent rating protocols after arriving at a consensus.

E. Training Schedule

We have allotted two weeks for training, and we do not plan to extend the training period beyond two weeks. However, you should attempt to get as much training accomplished as possible during the first week of training. The following is a suggested schedule for the first week.

Day 1

A.M.

1. Introduce rating task for the year (do not dwell on this too long).
2. Reemphasize all job requirements (e.g., hours, being on time, etc.).
3. Clarify roles, responsibilities of all relevant personnel, chain of command.
4. Indicate that trainees for this task have been preselected, but this does not guarantee that all trainees will meet the task's standards by the end of the training period (two weeks).
5. Select trainees for the study according to their quality of performance within the two-week training period.
6. Clarify our relations with schools--that we are, in effect, "guests" in the schools, and that we cannot accomplish our goals without maintaining their voluntary cooperation.
7. Introduce scales and their definitions in the Manual.

P.M.

1. Each trainee observes one child in the classroom, but takes notes on the child's behavior for not more than 20 minutes, and is not asked to fill out forms.

2. Ask each individual to report what she saw and to discuss with the group how these observations might be rated. Start providing corrections and clarifications of the scales immediately, while still allowing most of the discussion to arise from the group. Be sure to draw out as many individuals as possible.

Day 2

A.M.

1. Each trainee should observe a child for 30 minutes, trying to get into the classrooms as early in the morning as possible to make these observations. She should then rate the children.

2. Discuss as many ratings with as many trainees as possible, emphasizing that they should bring up questions about the scales. Again, some people would rather conceal their ignorance than learn, and such people will need to be drawn out.

P.M.

Continue discussion of morning, and have trainees observe and rate a second child, following a procedure similar to that of the morning. You will find it very helpful to "cycle" groups so that some persons are observing in classrooms while others are discussing their observations and ratings with you.

Day 3

A.M.

Continue same procedure of Day 2.

P.M.

1. Pair raters, and divide total group into two groups of three pairs each. One of these groups can observe in classrooms while the other is discussing observations and ratings at the home office with you. Pairs make simultaneous independent ratings of same child.

2. Since you will not be able to discuss with each pair simultaneously, ask them to go over all simultaneous ratings with each other, and to use the time with you to iron out any disagreements on specific items as well as general problems that might arise.

Day 4

A.M.

Continue same procedure of Day 3 - P.M.

P.M.

1. Continue same procedure.

2. Start to record interjudge agreements for each pair on sheets provided. Use this information to note weaknesses of pairs, and then provide them with additional training. Note: Throughout this period, explicit instructions should be given on the rules of independent observation! This is the time when trainees should accept as a matter of habit that independent observations always precede any discussion of disagreements on a particular child. Do not introduce the idea of recording consensus ratings until after the whole training period is completed and raters have been selected. Keep records of rater pair agreements for inspection by the Princeton monitor.

Day 5

A.M.

Continue the procedure of Day 4 - P.M.

P.M.

1. Continue the above.

2. Begin to formulate your opinions on which trainees will "make it," and which may be doubtful.

Second Week

1. Throughout the first week, any questions or problems which cannot be resolved locally should be referred to the Princeton Office. If in doubt, call!

2. In any case, you should call Mrs. Wilder during the fifth day, so that plans for the second week of training can be formulated. We need this information from all sites so that plans for the second week will be similar among sites.

V. Operations Phase

A. Contacting Study Classrooms

The Technical Director and/or the Trainer should contact and/or visit all schools in which observations will be made so as to explain the observation procedure to the teachers. In areas where the Head Start program is under centralized administration, the administrator can handle this briefing. The main points to be stressed with teachers are that the observers should not be made part of the classroom activities, and that classroom routines should not be altered when observers are present.

B. Instructions to Observers

Observers should be informed of schedules, procedures, and lines of authority. Particularly important are the following matters:

(1) Time of arrival at Field Office, and the importance of promptness.

(2) Who and where to phone in case of illness or absence (and the deadline after which the absence will be considered unexcused). The Trainer should also know how to reach observers after hours in order to convey information about changes in schedule, etc.

(3) Who and where to call from the field if a class is not in session or a particular set of observations cannot be made.

(4) Who to consult in case of a problem.

(a) Observers' questions concerning the Manual or a procedure should be raised with the Trainer who may need to ask the Technical Director, who may need to ask the appropriate person in the Princeton Office.

(b) Any questions concerning hours, payment, or personnel procedures should be raised with the Technical Director.

(c) Any unresolved differences which might arise between the Trainer and observer should be referred for arbitration to the Technical Director.

C. Scheduling

1. Lists of children in all nursery schools, day-care centers, and Head Start classes in the target city should be provided by the Local Coordinator. The Local Coordinator should also indicate which children on the lists are eligible children, and which have been tested.

2. Personality observations are to be made on all enumerated and eligible children in any preschool classes in the total site. By "eligible" is meant any child who meets age and residence requirements to enter first grade in designated target elementary schools. Personality observations will also be made on all classmates of eligible children in classes having 60 percent or more eligible children (80 percent in St. Louis).

3. Unless otherwise informed by the Princeton Office, it should be assumed that each child is to be observed twice within a two-week period as indicated in section I-B-9 of this Manual. However, there may be occasions when only a single paired observation will be needed in a particular site. In such cases, the Technical Director will be informed by the Princeton Office.

4. Eligible children in non-Head Start classes (e.g., day-care centers) should be observed throughout the months of observation and not left until the end.

D. Observation Procedures

1. Each child will be observed for 30 minutes continuously, followed immediately by ratings. In classes in which there is a limited period of free play, observers may observe two children in succession and rate them both. Trainers should not accept ratings based upon an observation time of less than 25 minutes.

2. Independent ratings are to be made and then discussed within pairs. During the discussion, consensus should be reached on all disagreements and entered on a third sheet. This sheet should be labelled "consensus" at the top. Note that the sheet should include a consensus rating on every scale, even when there was no initial disagreement on the scale.

3. Consensus ratings are to be made on the same day that the child is observed. (a) Observers are to be instructed to create proper conditions for discussing ratings and arriving at a consensus. (b) The final consensus discussion on any day must be conducted in the office with Trainer access to monitoring the discussion. (c) The Trainer will formally monitor one consensus discussion for each pair at least once a week.

4. Observations are made during free play periods only. If there is insufficient free play in a classroom, the Trainer or observer should visit the class herself to see what other activity periods might be substituted. Substitutions should be cleared with the Princeton Office.

5. There should be from five to ten days between first and second observations, with four days between the two an absolute minimum, and 13 the maximum. For example, a child seen on Monday for the first time should be seen again no earlier than Friday of the same week and no later than Friday of the following week. The two observations of a given child should be scheduled on different days of the week.

6. If any child cannot be observed for a second time within the requisite 13 days, that child should be seen as soon as possible. However, if the delay is prolonged and caused by illness, closing of school, or any other unusual event, rate the child twice again later.

7. The goal per pair is an average of 16 child ratings per week. The actual number may vary from four to 20 depending on the classroom and the observers. A daily record should be maintained of pair productivity and reasons for any extreme deviation should be inquired into.

8. In areas where there are an odd number of observers, the pairs should be manipulated so that no one person is left unpaired for more than a week at a time.

E. Monitoring and Record Keeping

1. It is the responsibility of the Trainer to request materials from the Princeton Office two weeks in advance of their being needed.

2. Rating sheets should be turned in to the Trainer at the end of each day. The Trainer should check them that day to see that they are properly and completely filled out. Individual rating sheets should be placed inside the consensus sheet for each child. The birth date and age of each child in months should be computed and entered on the face sheet next to the space for date of observation.

3. Interjudge agreement tallies for each paired observation should be filled out at the end of each day, together with the Daily Activity Reports for each week.

4. Each day's protocols and tally sheets should be kept together, and sent at the end of each week to the Princeton Office. A Master Schedule should be maintained and kept up to date with daily entries of which children were seen by which pairs of observers.

5. The Trainer should arrange to sit in on at least one consensus discussion of every pair each week.

6. The materials sent to ETS should be sent by the Technical Director, after he or she has checked them.

7. In collaboration with the Technical Director, the Trainer can rearrange pairs, if necessary, to maintain good interpersonal relations among observers. From time to time, rearrangement of pairs may be requested by the Princeton Office.

8. In the case of illness, resignation, or dismissal of any individual, the Princeton Office should be requested to indicate a plan for recruitment and training of new personnel.

9. When an individual observer has been ill for more than a week, she will need a retraining period of at least one day.

APPENDIX E[*]

Median Interrater Reliabilities for Sites and Observation Periods

[*] Notes for Interpreting the Contents of Appendix E.

1. Reliability estimates are Pearson correlations for pairs observing at least 20 children simultaneously and independently.
2. Cell entries are based upon the number of pairs indicated in column headings. (In some instances, the same judge was a member of more than one pair.)
3. The median is reported if there was scale variability for at least one pair in the cell; if not, no number is reported.
4. An asterisk in the cell indicates that variability was zero for at least one pair.
5. In the column headings, F = Fall, S = Spring, and C = Fall and Spring combined.

Appendix E

Median Interrater Reliabilities for Sites and Observation Periods

Bipolar Scale	Portland			St. Louis			Trenton			3-Site Total			
	F(6)	S(3)	C(9)	F(5)	S(3)	C(8)	F(4)	S(2)	C(6)	F(15)	S(8)	C(23)	Range (23)
1. Withdrawn-Involved	0.70	0.52	0.67	0.83	0.63	0.74	0.89	0.70	0.87	0.76	0.54	0.70	0.30—0.96
2. Masculine-Feminine	0.78	0.72	0.77	0.87	0.83	0.85	0.82	0.62	0.81	0.82	0.72	0.82	0.52—1.00
3. Tol. Frustration-Vul. to Frustration	0.52	0.37	0.46	0.82	0.71	0.77	0.89	0.59*	0.81*	0.63	0.59*	0.63*	0.09—0.93*
4. Rebellious-Compliant	0.52	0.54	0.54	0.75	0.54	0.66	0.64	0.15	0.59	0.62	0.52	0.54	0.02—0.90
5. Expressive-Restrained	0.50	0.69	0.55	0.62	0.63	0.63	0.86	0.64	0.85	0.60	0.66	0.63	0.12—0.89
6. Tense-Relaxed	0.46	0.46	0.46	0.65	0.61	0.63	0.75	0.37	0.72	0.59	0.54	0.59	-0.04—0.88
7. Sensitive to Others-Self-Centered	0.53	0.45	0.47	0.65	0.53	0.51	0.73	0.25	0.70	0.65	0.46	0.58	0.09—0.88
8. Submissive-Dominant	0.56	0.70	0.61	0.78	0.50	0.78	0.79	0.40	0.71	0.67	0.54	0.65	0.22—0.90
9. Active-Passive	0.64	0.57	0.68	0.81	0.59	0.77	0.84	0.62	0.83	0.76	0.58	0.66	-0.03—0.88
10. Apathetic-Energetic	0.70	0.65	0.68	0.70	0.68	0.69	0.89	0.72	0.83	0.71	0.68	0.69	0.13—0.90
11. Stable-Unstable	0.41	0.43	0.43	0.57	0.67	0.58	0.83	0.66	0.74	0.59	0.45	0.57	-0.15—1.00
12. Solitary-Social	0.61	0.44	0.57	0.86	0.72	0.79	0.89	0.70	0.86	0.68	0.68	0.67	-0.42—0.96
13. Assertive, Bold-Timid, Fearful	0.57	0.62	0.60	0.72	0.68	0.70	0.83	0.47	0.78	0.72	0.60	0.63	0.33—0.86
14. Dependent-Independent	0.63	0.57	0.58	0.77	0.49	0.70	0.81	0.51	0.73	0.77	0.53	0.65	0.30—0.89
15. Constructive-Destructive	0.58	0.42	0.46	0.64	0.67	0.66	0.63	0.45	0.59	0.64	0.45	0.58	0.10—0.89
16. Aimless-Purposeful	0.60	0.47	0.53	0.39	0.51	0.41	0.78	0.44	0.68	0.61	0.48	0.58	0.19—0.82
17. Academ. Mot.-Otherwise Mot.	0.44	0.48	0.48	0.76	0.44	0.73	0.79	0.67*	0.76*	0.66	0.48*	0.52	-0.04—0.90*
18. Aggressive-Affectionate	0.45	0.22	0.33	0.64	0.58	0.63	0.75	0.29	0.67	0.63	0.48	0.58	0.05—0.91
19. Socially Secure-Socially Insecure	0.51	0.43	0.57	0.81	0.67	0.74	0.88	0.56	0.80	0.71	0.66	0.66	0.11—0.92
20. Rigid-Flexible	0.42	0.30	0.36	0.42	0.34	0.42	0.79	0.44	0.64	0.62	0.30	0.42	-0.13—0.96
21. Happy-Unhappy	0.63	0.62	0.62	0.68	0.55	0.62	0.76	0.50	0.74	0.68	0.60	0.65	0.27—0.80
Median of Medians	0.56	0.48	0.55	0.72	0.61	0.69	0.81	0.51	0.74	0.66	0.54	0.63	

Appendix E (Cont'd)

Unipolar Scale	Portland F(6)	Portland S(3)	Portland C(9)	St. Louis F(5)	St. Louis S(3)	St. Louis C(8)	Trenton F(4)	Trenton S(2)	Trenton C(6)	3-Site Total F(15)	3-Site Total S(8)	3-Site Total C(23)	3-Site Total Range (23)
1. Seeks physical affection from adult	0.92*	0.89	0.91*	0.95*	0.91	0.91*	0.96*	0.78	0.96*	0.95*	0.90	0.93*	0.38—1.00*
2. Seeks physical affection from child	1.00*	0.39*	0.81*	0.95*	0.96*	0.98*	1.00*	—	1.00*	1.00*	0.81*	1.00	-0.03—1.00*
3. Seeks help or guidance from adult	0.63	0.64	0.63	0.73	0.94	0.89	0.98	0.69	0.96	0.83	0.76	0.73	0.17—1.00
4. Seeks help or guidance from child	0.95*	0.46	0.77*	0.87*	0.85*	0.87*	1.00*	0.83	1.00*	0.95*	0.70	0.87	0.35—1.00*
5. Seeks physical proximity of adult	0.78	0.62	0.76	0.98*	0.85	0.95*	1.00	0.90	0.99	0.91	0.85	0.83	0.54—1.00*
6. Seeks physical proximity of child	0.64	0.52	0.54	0.70	0.95*	0.90*	0.96	0.69	0.95	0.84	0.64	0.72*	0.24—1.00*
7. Seeks attention from adult—pos. bid	0.74	0.60	0.64	0.90	0.77	0.90	0.97	0.84	0.94	0.89	0.76	0.85	0.38—0.98
8. Seeks attention from child—pos. bid	0.79	0.58	0.61	0.81	0.75	0.80	0.94	0.65	0.90	0.85	0.65	0.75	0.04—1.00
9. Seeks attn. from adult—delib.neg.bid	0.72*	0.27	0.50*	1.00*	1.00*	1.00*	1.00	0.22	0.92	1.00*	0.37*	0.77*	-0.09—1.00*
10. Seeks attn. fr.child—delib. neg. bid	0.78	0.46	0.75	0.86*	0.94*	0.82*	1.00*	0.32	1.00*	0.82*	0.58*	0.75*	-0.06—1.00*
11. Seeks attn. from adult—weak bid	0.72	0.43	0.57	0.85	0.77	0.78	1.00	0.82	1.00	0.85	0.70	0.77	0.17—1.00
12. Seeks attn. from child—weak bid	0.73	0.21	0.61	0.80*	0.72	0.72*	0.94*	0.78	0.94*	0.85*	0.67	0.72*	-0.06—1.00*
13. Seeks praise or approval from adult	0.84*	0.25	0.64*	0.75*	0.86	0.85*	0.99	0.79	0.95	0.93*	0.77	0.85*	0.23—1.00*
14. Seeks praise or approval from child	0.80	-0.02*	0.70*	0.75*	0.85*	0.85*	0.85*	0.78	0.81*	0.89*	0.84*	0.84*	-0.02—1.00*
15. Seeks evaluation from adult	0.85*	-0.02*	0.42*	0.97*	1.00*	1.00*	1.00*	0.45*	0.73*	0.95*	0.45*	0.94*	-0.02—1.00*
16. Seeks evaluation from child	1.00*	0.70*	0.85*	0.69*	—	0.69*	0.70*	—	0.70*	0.77*	0.70*	0.70*	0.00—1.00*
17. Seeks or makes a comparative eval.	0.77*	0.36	0.66*	0.86*	0.70	0.81*	1.00	0.65	1.00	0.90*	0.59	0.70*	-0.01—1.00*
18. Demanding of adult	0.88*	0.35*	0.64*	0.98*	0.86*	0.95*	1.00*	1.00*	1.00*	1.00*	0.73*	0.98*	0.12—1.00*
19. Demanding of child	0.61*	0.37*	0.46*	0.76	0.92	0.84	0.95	0.85	0.95	0.75	0.79	0.76*	-0.07—1.00*
20. Adult to do what self is exp. to do	0.70*	0.87*	0.79*	1.00*	1.00*	1.00*	1.00*	—	1.00*	1.00*	1.00*	1.00*	-0.03—1.00*
21. Child to do what self is exp. to do	1.00*	—	1.00*	0.98*	1.00*	1.00*	1.00*	—	1.00*	1.00*	1.00*	1.00*	0.95—1.00*
22. Exhibits helplessness	0.75	0.47	0.72	0.91*	--	0.91*	0.95	0.92*	0.94*	0.80*	0.59*	0.79	0.15—1.00*
23. Rejects positive bid from adult	0.80*	0.57*	0.71*	0.98*	1.00*	1.00*	1.00*	0.72*	1.00*	0.98*	0.72*	0.95*	0.57—1.00*
24. Rejects positive bid from child	0.73	0.32*	0.70*	0.97*	0.98*	1.00*	0.74*	0.68*	0.68*	0.89*	0.70	0.78*	-0.07—1.00*

Appendix E (Cont'd)

Unipolar Scale	Portland			St. Louis			Trenton			3-Site Total			
	F(6)	S(3)	C(9)	F(5)	S(3)	C(8)	F(4)	S(2)	C(6)	F(15)	S(8)	C(23)	Range (23)
25. Seeks adult's perm. to do something	0.85	0.69	0.81	0.81	0.90*	0.82*	0.95	0.83	0.92	0.90	0.81	0.85	0.62—1.00*
26. Seeks perm. of child to do something	0.78*	0.22	0.78*	0.62	0.69*	0.74*	1.00*	0.71*	1.00*	0.78*	0.59*	0.78*	-0.05—1.00*
27. Conforms to routine request of adult	0.63	0.49	0.59	0.81	0.85	0.83	0.87	0.69	0.86	0.81	0.68	0.68	-0.26—0.93
28. Conforms to routine request of child	0.58	0.41	0.48	0.77	0.84	0.83	0.94	0.66	0.87	0.82	0.57	0.66	-0.06—1.00
29. Rejects reasonable request of adult	0.83	0.61	0.81	0.79	0.94	0.85	0.94*	0.85	0.92*	0.83*	0.88	0.81*	0.30—1.00*
30. Rejects reasonable request of child	0.75	0.34	0.56	0.70	0.89	0.83	0.80*	0.72	0.80*	0.75	0.71	0.70*	0.04—1.00*
31. Engages in complementary behavior	0.69	0.66	0.66	0.88	0.85	0.83	0.92*	0.74	0.89	0.82	0.71	0.77	0.57—0.96*
32. Engages in parallel activity	0.68	0.60	0.67	0.71	0.59	0.65	0.89	0.66	0.87	0.75	0.58	0.67	0.32—1.00
33. Concern for other in distress	0.77	0.28*	0.62*	0.89	0.86	0.89	1.00	0.98	1.00	0.94*	0.86*	0.84*	0.23—1.00*
34. Praises or expresses approv. to adult	1.00*	-0.05*	0.48*	1.00*	--	1.00*	--	--	--	1.00*	-0.05*	1.00*	-0.05—1.00*
35. Praises or expresses approv. to child	0.48*	--	0.46*	0.90*	1.00*	1.00*	--	--	--	0.70*	1.00*	0.85*	0.27—1.00*
36. Expresses criticism of adult	0.87*	0.73*	0.73*	0.70*	1.00*	0.85*	1.00*	--	1.00*	0.95*	0.86	0.95	0.69—1.00*
37. Expresses criticism of child	0.67	0.53	0.55	0.76	0.70	0.73	0.98	0.79	0.98	0.76	0.63	0.70*	-0.04—1.00*
38. Reciprocates with adult	1.00*	-0.02*	0.49*	1.00*	--	1.00*	--	--	--	1.00*	-0.02	1.00*	-0.02—1.00*
39. Reciprocates with child	0.70	-0.04*	0.69	1.00*	0.84*	1.00*	1.00*	--	1.00*	0.87*	0.81	0.83*	-0.05—1.00*
40. Tries to "make up" with adult	--	--	--	--	--	--	--	--	--	--	--	--	-- --
41. Tries to "make up" with child	0.65*	0.48*	0.65*	0.59*	0.90	0.70*	--	-0.03*	-0.03*	0.65*	0.85*	0.70*	-0.05—1.00*
42. Friendly to adult	0.62	0.52	0.59	0.65	0.77	0.75	0.85	0.75	0.79	0.75	0.72	0.70	0.50—0.92
43. Friendly to child	0.77	0.46	0.65	0.79	0.68	0.79	0.86	0.69	0.81	0.81	0.60	0.78	0.42—0.98
44. Nurturant to adult	0.85*	0.53*	0.63*	0.77	0.70	0.75	0.98	0.83	0.98	0.88	0.66*	0.77*	0.48—1.00*
45. Nurturant to child	0.65	0.13	0.51	0.75	0.76	0.76	0.94	0.53	0.92	0.81	0.51	0.71	0.08—1.00
46. Exhibits leadership	0.75	0.56	0.68	0.82	0.93*	0.86*	0.94	0.42	0.90	0.82	0.73*	0.80*	-0.04—0.97*
47. Behaves competitively	0.49	0.52*	0.52*	0.63*	0.81	0.76*	0.97	0.90	0.95*	0.67*	0.81*	0.72*	-0.06—1.00*
48. Seeks leadership of adult	0.20*	-0.03*	-0.02*	0.49*	--	0.49*	0.85*	0.68*	0.70*	0.70*	-0.02*	0.45*	-0.04—1.00*

Appendix **E** (Cont'd)

Unipolar Scale	Portland			St. Louis			Trenton			3-Site Total			
	F(6)	S(3)	C(9)	F(5)	S(3)	C(8)	F(4)	S(2)	C(6)	F(15)	S(8)	C(23)	Range (23)
49. Seeks leadership of child	0.79*	0.62	0.70*	0.88*	1.00*	1.00*	1.00	0.93	1.00	0.97	0.86*	0.94	-0.03—1.00*
50. Smiles and/or laughs	0.69	0.63	0.68	0.71	0.68	0.70	0.82	0.55	0.78	0.76	0.63	0.70	0.35—0.93
51. Engages in gross motor activity	0.75	0.59	0.71	0.89	0.90	0.89	0.96	0.89	0.94	0.82	0.85	0.85	0.32—0.98
52. Engages in fine manipulative act.	0.63	0.59	0.59	0.86	0.85	0.85	0.87	0.58	0.83	0.76	0.65	0.76	0.23—0.97
53. Engages in cognitive activity	0.78	0.74	0.75	0.89	0.92	0.89	1.00	0.81	1.00	0.89	0.77	0.83	0.44—1.00
54. Engages in fantasy activity	0.82	0.80	0.80	0.89	0.86	0.86	0.95	0.78	0.95	0.90	0.80	0.85	0.54—0.97
55. Engages in artistic activity	0.87	0.62	0.83	0.91	0.85	0.88	0.95	0.89	0.93	0.87	0.83	0.87	0.55—1.00
56. Concerned with satis. of phys. need	0.74	0.58	0.68	0.88	0.75	0.86	0.98	0.75	0.94	0.88	0.74	0.80	-0.16—1.00
57. Takes init. in carrying out own act.	0.54	0.36	0.50	0.67	0.69	0.86	0.83	0.60	0.77	0.67	0.55	0.53	0.25—0.97
58. Tries to pursue difficult task	0.67	0.49	0.62	0.80*	0.93*	0.80*	0.96	0.76	0.94	0.80	0.73*	0.74*	-0.03—1.00*
59. Attempts to overcome obst. by self	0.40*	0.24	0.40*	0.90*	0.81	0.86*	0.97*	-0.05*	0.94*	0.68*	0.62*	0.62*	-0.05—1.00*
60. Exhibits persistence	0.44	0.22	0.35	0.35	0.67	0.56	0.91	0.65	0.84	0.47	0.63	0.61	-0.08—1.00
61. Completes activity by self	0.77	0.50	0.68	0.87	0.77	0.83	0.85	0.77	0.85	0.79	0.69	0.77	0.41—0.96
62. Intrinsic satisfaction	0.26	0.22	0.24	0.62	0.71	0.63	0.82	0.54	0.80	0.62	0.59	0.58	0.01—0.98
63. Praises self	0.49*	0.46	0.48*	0.73*	0.96*	0.81*	0.97*	-0.05*	0.96*	0.80*	0.46*	0.49	-0.05—1.00*
64. Threatens to act aggres. to adult	--	0.87*	0.87*	1.00*	--	1.00*	1.00*	--	1.00*	1.00*	0.87*	1.00*	-0.03—1.00*
65. Threatens to act aggres. to child	0.76	0.69	0.74	0.83	0.85	0.84	1.00	0.15*	1.00*	0.83	0.69*	0.77	0.15—1.00*
66. Possessive	0.75	0.55	0.67	0.80	0.86	0.82	0.96	0.69	0.93	0.83	0.67	0.80	0.03—1.00
67. Verbally aggressive to adult	--	0.81*	0.81*	1.00*	1.00*	1.00*	1.00*	1.00*	1.00*	1.00*	1.00*	1.00*	0.81—1.00*
68. Verbally aggressive to child	0.39	0.37	0.38	0.77*	0.85	0.83*	0.98	0.82*	0.96*	0.79*	0.68*	0.74	-0.03—1.00*
69. Bosses adult	0.92*	0.68*	0.84*	0.70*	1.00*	1.00*	--	1.00*	1.00*	0.84*	1.00*	1.00*	0.70—1.00*
70. Bosses child	0.69	0.50	0.65	0.89	0.75	0.85	0.93	0.67	0.84	0.76	0.68	0.76	-0.07—1.00
71. Physically aggressive to adult	1.00*	0.88*	0.94*	1.00*	1.00*	1.00*	--	1.00*	1.00*	1.00*	1.00*	1.00*	0.88—1.00*
72. Physically aggressive to child	0.89	0.48	0.89	0.85	0.88	0.88	0.99*	0.85	0.99	0.89	0.85	0.89	-0.13—1.00*

Appendix E (Cont'd)

Unipolar Scale	Portland F(6)	Portland S(3)	Portland C(9)	St. Louis F(5)	St. Louis S(3)	St. Louis C(8)	Trenton F(4)	Trenton S(2)	Trenton C(6)	3-Site Total F(15)	3-Site Total S(8)	3-Site Total C(23)	Range (23)
73. Deliberately aggressive to property	0.79	0.44	0.77	0.92	0.87	0.88	0.95	0.68	0.93	0.86	0.67	0.79	0.28—1.00
74. Expresses neg. feeling about self	0.66*	0.76*	0.75*	0.81	0.91*	0.81*	0.85*	0.53*	0.70*	0.70*	0.76*	0.78*	-0.03—1.00*
75. Exhibits visual curiosity	0.34*	0.14	0.23*	0.23	1.00*	0.50*	0.72	0.25*	0.70*	0.44*	0.25*	0.58	-0.09—1.00*
76. Exhibits active curiosity	0.63	0.22	0.39	0.71	0.45	0.66	0.88	0.40	0.78	0.68	0.39	0.61	-0.26—0.93
77. Seeks information from adult	0.59	0.54	0.54	0.68*	0.87	0.70*	0.95	0.69	0.88	0.66	0.68	0.71*	0.29—1.00*
78. Seeks information from child	0.66	0.47	0.55	0.63*	0.79	0.72*	1.00	0.59	0.92	0.71*	0.59	0.72*	0.36—1.00*
79. Responsive to teaching by adult	0.65	0.51	0.61	0.81	0.94	0.84	0.96	0.79	0.94	0.81	0.75	0.81	0.25—1.00
80. Responsive to teaching by child	0.70*	0.25*	0.69*	-0.03*	1.00*	0.12*	1.00*	—	1.00*	0.70*	0.36*	0.70*	-0.05—1.00
81. Imitates behavior of adult	0.49*	0.22	0.35*	0.68*	0.75*	0.73*	1.00*	0.49	1.00*	0.70*	0.30*	0.68	-0.11—1.00
82. Imitates behavior of child	0.47	0.67	0.49	0.66	0.81	0.69	0.93	0.74	0.87	0.71	0.74	0.71	-0.03—1.00
83. Instructs or demonstrates	0.68*	0.40	0.67*	0.84	0.84	0.84	0.92	0.63	0.92	0.80*	0.69	0.76*	0.14—1.00*
84. Communicates verbally to adult	0.83	0.60	0.81	0.82	0.86	0.84	0.90	0.84	0.87	0.84	0.84	0.84	0.59—0.95
85. Communicates verbally to child	0.86	0.64	0.85	0.88	0.82	0.85	0.91	0.79	0.89	0.87	0.81	0.85	0.47—1.00
86. Commun. meaningful comp. idea to child	0.94*	0.41*	0.87*	0.63	0.55	0.62	0.93*	—	0.93*	0.85*	0.48*	0.82	0.41—1.00*
87. Commun. meaningful comp. idea to adult	0.95*	-0.04*	0.46*	0.78*	0.83	0.83*	1.00*	1.00*	1.00*	0.94*	0.83	0.87*	-0.04—1.00*
88. Verbally loud	0.74	0.53	0.73	0.83	0.83	0.83	0.93	0.78	0.87	0.84	0.73	0.83	0.48—1.00
89. Talks to self	0.59	0.38	0.56	0.73	0.83	0.82	0.95	0.76	0.86	0.67	0.75	0.67	0.15—1.00
90. Difficult to understand	0.88	0.27*	0.83*	0.89*	—	0.89*	0.95*	1.00*	1.00*	0.88*	0.58	0.88	-0.04—1.00*
91. Does not concentrate on activity	0.67	0.25	0.62	0.38*	0.90*	0.56*	0.95	0.90	0.95	0.70*	0.63*	0.70	0.16—1.00*
92. Inattentive when adult commun. to him	0.43	0.59	0.43	0.52*	0.49*	0.80*	0.95*	0.64	0.93	0.62*	0.59*	0.60	-0.04—1.00*
93. Inattentive when child commun. to him	0.78	0.23*	0.49*	0.86	0.91*	0.81*	0.94*	0.68	0.79*	0.83*	0.68*	0.79	-0.09—1.00*
94. Incomplete communicative act	0.54	0.31	0.41	0.66*	0.44*	0.65*	0.96*	0.45	0.81	0.64*	0.34*	0.54	-0.03—1.00*
95. Exhibits goal-directed activity	0.68	0.10	0.62	0.92	0.83	0.85	0.93	0.71	0.84	0.77	0.68	0.72	0.03—1.00
96. Shows planning in pursuing activity	0.57	-0.09	0.51	0.73*	0.89	0.89*	0.92	0.62	0.84	0.69*	0.49	0.64	-0.13—1.00*

Appendix E (Cont'd)

Unipolar Scale	Portland			St. Louis			Trenton			3-Site Total			
	F(6)	S(3)	C(9)	F(5)	S(3)	C(8)	F(4)	S(2)	C(6)	F(15)	S(8)	C(23)	Range (23)
97. Flexible in substituting goal	0.63	0.05	0.60	0.90*	0.66	0.79*	1.00	0.55	0.79	0.86*	0.45	0.65	-0.08—1.00*
98. Corrects/modifies perf.—meet own std.	0.61	0.49	0.59	0.61*	0.79	0.60*	1.00*	—	0.71	0.63*	0.54*	0.62	-0.06—1.00*
99. Products or act. have common theme	0.73*	-0.04*	0.53*	0.70*	0.95*	0.90*	1.00*	0.58	1.00	0.77*	0.53*	0.95	-0.05—1.00*
100. Perseverates on activity or task	0.46*	0.18	0.36*	0.64	0.87	0.66	0.99	0.55	0.97	0.70*	0.52	0.59	-0.23—1.00*
101. Perseverates verbally	0.69	0.61*	0.62*	0.70	0.77	0.74	0.95	0.62*	0.90*	0.70*	0.67*	0.70	-0.05—1.00*
102. Preoccupied with own thoughts	0.48	0.34	0.46	0.67	0.79	0.74	0.94	0.69	0.93	0.67	0.52	0.63	-0.09—1.00
103. Unable to tolerate delay	0.79*	0.54*	0.75*	0.89*	0.91*	0.89*	0.96*	0.33	0.69*	0.86*	0.69*	0.75	-0.03—1.00*
104. Con. about phys. discomf/phys. danger	0.73	0.52	0.58	0.88*	0.80	0.84*	0.90	0.90	0.93	0.84*	0.73	0.84	0.07—0.94*
105. Seeks verbal reassurance	0.88*	0.33*	0.67*	0.70*	—	0.70*	1.00*	-0.03*	1.00*	0.94*	-0.02*	0.70	-0.03—1.00*
106. Hesitant in relating to adult	0.64	0.34	0.56	0.91*	0.95*	0.95*	0.96*	0.73	0.96	0.94*	0.60*	0.73	-0.05—1.00*
107. Hesitant in relating to child	0.77	0.57	0.64	0.81	0.90	0.94*	1.00	0.63	0.97	0.93*	0.70	0.88	-0.11—1.00*
108. Hesitant to try things on his own	0.88*	0.69	0.74*	0.65*	1.00*	1.00*	0.99	0.45	0.95	0.93*	0.82*	0.88	-0.04—1.00*
109. Unusually good physical coordination	0.76*	0.50	0.59*	0.96*	0.90	0.93*	0.93*	1.00*	1.00*	0.88*	0.90*	0.91	0.26—1.00*
110. Poor physical coordination	0.88	—	0.88*	—	1.00*	—	1.00*	—	1.00*	1.00*	—	1.00*	0.75—1.00*
111. Restlessness	0.84	0.21	0.75	0.97*	1.00*	1.00*	1.00	0.75	1.00	0.90*	0.60*	0.86*	0.16—1.00*
112. Easily frustrated by adults	0.49*	0.20*	0.20*	0.57*	—	0.57*	1.00*	1.00*	1.00*	1.00*	0.60*	1.00*	-0.03—1.00*
113. Easily frustrated by children	0.62*	0.34*	0.62*	0.85*	0.60*	0.73*	0.76*	0.50	0.70*	0.70*	0.50*	0.70	-0.03—1.00*
114. Recovers quickly from frustration	0.58	0.13	0.50	0.75	0.92	1.00	0.92	0.57	0.74	0.67	0.51	0.59	-0.04—1.00
115. Response to frust.: becomes stubborn	0.56*	0.46*	0.51*	0.97*	1.00*	1.00*	1.00*	—	1.00*	0.70*	0.75*	0.70	0.37—1.00*
116. Response to frust.: becomes fearful	0.68*	1.00*	0.72*	1.00*	1.00*	1.00*	1.00*	1.00*	1.00*	0.90*	1.00*	1.00*	0.61—1.00*
117. Response to frustration: cries	0.93	0.95*	0.93*	0.92*	0.98*	0.98*	1.00*	1.00	1.00*	0.97*	1.00*	1.00*	0.70—1.00*
118. Resp. to frustration: becomes deject.	0.70*	0.22	0.54*	0.57*	1.00*	0.79*	0.85*	0.74	0.85*	0.70*	0.56*	0.57	-0.05—1.00*
119. Resp. to frust.: becomes def., rebell.	0.95*	0.49*	0.91*	0.73*	0.90	0.89*	1.00*	—	1.00*	0.91*	0.85*	0.95	-0.10—1.00*
120. Resp. to frust.: increased quietness	0.66*	0.45*	0.63*	0.54*	0.94	0.81*	1.00*	0.69	0.93*	0.70*	0.81*	0.76*	-0.04—1.00*

Appendix E (Cont'd)

Unipolar Scale	Portland F(6)	Portland S(3)	Portland C(9)	St. Louis F(5)	St. Louis S(3)	St. Louis C(8)	Trenton F(4)	Trenton S(2)	Trenton C(6)	3-Site Total F(15)	3-Site Total S(8)	3-Site Total C(23)	3-Site Total Range (23)
121. Resp. to frust.: seems aimless	0.78*	0.17	0.63*	--	--	--*	1.00*	--	1.00*	0.79*	0.17*	0.79*	-0.08 —1.00*
122. Resp. to frust.: seeks comf.—adult	0.73*	0.81*	0.77*	0.88*	--	0.88*	1.00*	0.85	1.00*	0.89*	0.81*	**0.88***	0.42 —1.00*
123. Resp. to frust.: seeks comf.—child	1.00*	1.00*	1.00*	--	--	--	--	--	--	1.00*	1.00*	1.00*	-- —1.00*
124. Resp. to frust.: retaliates	0.70	0.29	0.60	0.83	0.79	0.83	1.00	0.65*	1.00*	0.80	0.65*	0.62	-0.07 —1.00*
125. Resp. to frust.: ignores frustration	0.57	0.29	0.46	0.70	0.95	0.70	0.98	0.63	0.93	0.70	0.63*	0.68*	-0.06 —1.00*
126. Resp. to frust.: effectively defends	0.54	0.23	0.48	0.91*	0.90	0.96*	0.93	0.74	0.90	0.84	0.69*	0.78	-0.03 —1.00*
127. Resp. to frust.: becomes angry	0.72*	0.40	0.64*	0.85*	0.86	0.86*	0.96	0.89	0.94	0.88*	0.84	0.81*	0.22 —1.00*
Median of Medians	0.76	0.49	0.64	0.88	0.85	0.87	0.98	0.73	0.92	0.86	0.63	0.74	

APPENDIX F[*]

Intercorrelations Among 18 Construct Measures Within Sex-Age-Period ($Fall_1$ X Spring) Subgroups

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[*] Notes for Interpreting the Contents of Appendix F.

1. Numbers used to designate column and row headings correspond to the construct measures defined in Table 5 of the text.
2. Cell entries are Pearson correlations, with decimals omitted.
3. Significance levels are indicated as follows:

$^{*}p < .01$ (two-tailed)

$^{**}p < .001$ (two-tailed)

Appendix F

Intercorrelations Among 18 Construct Measures in Younger Boys During the Fall

Construct No.	1	2	3	4	5	6	7	8	9	10
1										
2	63^{**}									
3	38^{**}	54^{**}								
4	04	26^{**}	41^{**}							
5	-06	14	02	43^{**}						
6	-30^{**}	-16	-16	22^{*}	55^{**}					
7	-67^{**}	-74^{**}	-60^{**}	-09	11	41^{**}				
8	-51^{**}	-66^{**}	-56^{**}	-34^{**}	-24^{*}	01	59^{**}			
9	-10	-32^{**}	-13	-49^{**}	-62^{**}	-38^{**}	05	41^{**}		
10	52^{**}	49^{**}	36^{**}	-17	-40^{**}	-61^{**}	-65^{**}	-32^{**}	22^{*}	

	11	13	14	15	16	12	17	18
11								
13	29^{**}							
14	23^{*}	20^{*}						
15	17	41^{**}	06					
16	20^{*}	15	13	09				
12	09	29^{**}	08	-01	-02			
17	-06	01	09	-29^{**}	-23^{*}	38^{**}		
18	00	09	-02	-08	-02	31^{**}	27^{**}	

	1	2	3	4	5	6	7	8	9	10
11	01	16	-05	00	05	-02	-12	09	03	07
13	07	21^{*}	27^{**}	24^{*}	00	-17	-21^{*}	-11	-18	22^{*}
14	-06	00	05	09	13	00	-03	-04	-15	-06
15	-10	-03	08	20^{*}	-06	-06	-06	02	-05	-01
16	-20^{*}	-09	-02	11	01	-04	03	00	-04	-03
12	49^{**}	38^{**}	17	06	01	-17	-43^{**}	-24^{*}	-16	31^{**}
17	33^{**}	27^{**}	10	-15	-10	-15	-30^{**}	-13	09	30^{**}
18	37^{**}	28^{**}	14	-10	-21^{*}	-31^{**}	-35^{**}	-18	01	32^{**}

Appendix F (Cont'd)

Younger Girls in Fall

Construct No.	1	2	3	4	5	6	7	8	9	10
1										
2	63**									
3	42**	50**								
4	10	18	53**							
5	-02	-01	06	02						
6	-40**	-35**	-28**	-01	46**					
7	-68**	-78**	-56**	-25*	09	42**				
8	-55**	-69**	-55**	-23*	-16	24*	68**			
9	03	01	-15	-16	-48**	-45**	-03	20		
10	56**	62**	43**	11	-25*	-67**	-67**	-52**	30**	

	11	13	14	15	16	12	17	18
11								
13	30**							
14	22*	28**						
15	08	45**	12					
16	34**	14	08	02				
12	19	28**	17	00	15			
17	18	12	15	-20	05	28**		
18	05	19	-07	-12	-08	45**	20	

	1	2	3	4	5	6	7	8	9	10
11	18	23*	09	03	03	00	-34**	-05	01	11
13	01	18	41**	47**	-22*	-10	-27*	-07	-06	11
14	11	11	21	24*	-09	-15	-17	-12	06	23*
15	-12	-07	06	21	-08	-01	00	12	01	00
16	13	19	19	22*	11	-03	-26*	-13	-08	22*
12	54**	48**	36**	23*	-08	-24*	-47**	-28**	-06	40**
17	38**	33**	18	-03	-03	-26*	-30**	-21	16	26*
18	34**	35**	28**	06	-23*	-37**	-45**	-28**	08	36**

Appendix F (Cont'd)

Older Boys in Fall

Construct No.	1	2	3	4	5	6	7	8	9	10
1										
2	55**									
3	30**	38**								
4	-01	16	42**							
5	-16	05	06	37**						
6	-16	-18	-24*	17	43**					
7	-65**	-64**	-54**	-15	12	32**				
8	-28**	-51**	-33**	-30**	-16	06	42**			
9	-09	-28**	-16	-39**	-63**	-41**	11	35**		
10	44**	51**	35**	-10	-30**	-60**	-56**	-28**	12	

	11	13	14	15	16	12	17	18
11								
13	41**							
14	32**	44**						
15	29**	50**	41**					
16	22*	20	16	12				
12	24*	20	07	-02	03			
17	08	-04	-12	-25*	-11	41**		
18	08	01	-08	-12	00	46**	34**	

	1	2	3	4	5	6	7	8	9	10
11	07	26*	18	10	12	-07	-36**	-01	-14	22*
13	-03	31**	54**	43**	16	-21*	-31**	-09	-21*	25*
14	-20	11	21*	17	17	-02	-02	10	-13	06
15	-19	11	11	31**	11	11	00	01	-13	-01
16	07	-04	21*	23*	06	-04	-06	11	-02	11
12	53**	42**	13	-01	-02	-05	-42**	-11	-19	31**
17	37**	18	04	-31**	-10	-15	-34**	-08	-01	26*
18	29**	27**	09	05	01	-10	-31**	-11	-10	14

Appendix F (Cont'd)

Older Girls in Fall

Construct No.	1	2	3	4	5	6	7	8	9	10
1										
2	58**									
3	35**	41**								
4	10	31**	49**							
5	21	29**	06	15						
6	-27*	-26*	-39**	-23*	18					
7	-69**	-76**	-58**	-23*	-11	38**				
8	-57**	-69**	-46**	-34**	-29**	24*	68**			
9	-27*	-29**	-08	-13	-51**	-06	17	27*		
10	53**	47**	47**	38**	-05	-62**	-56**	-54**	-04	

	11	13	14	15	16	12	17	18
11								
13	34**							
14	31**	42**						
15	20	38**	16					
16	32**	18	06	-07				
12	02	39**	19	04	-05			
17	29**	17	-05	-05	15	24*		
18	-19	17	-01	-02	-19	49**	00	

	1	2	3	4	5	6	7	8	9	10
11	12	16	12	12	-07	-20	-23*	-06	-02	25*
13	05	29**	49**	44**	-01	-45**	-29**	-15	00	41**
14	06	17	16	15	05	-23*	-17	-13	-07	14
15	-07	06	17	16	00	-02	-01	07	-11	00
16	-04	04	06	15	-01	-18	-12	-09	-03	13
12	51**	49**	34**	20	16	-28*	-52**	-38**	-11	39**
17	28*	21	12	08	-05	-13	-35**	-20	-03	24*
18	31**	30**	25*	01	07	-19	-35**	-13	03	19

Appendix F (Cont'd)

Younger Boys in Spring

Construct No.	1	2	3	4	5	6	7	8	9	10
1										
2	74**									
3	41**	43**								
4	-01	01	22*							
5	10	09	-02	38**						
6	-26**	-30**	-11	32**	42**					
7	-71**	-78**	-56**	02	08	44**				
8	-45**	-46**	-42**	-31**	-24*	-09	32**			
9	-12	-20*	-08	-43**	-59**	-37**	03	30**		
10	56**	58**	36**	-24*	-22*	-61**	-68**	-09	22*	

	11	13	14	15	16	12	17	18
11								
13	26**							
14	25*	17						
15	14	34**	21*					
16	22*	22*	03	10				
12	12	08	11	-08	-16			
17	-10	01	-20*	-40**	-06	26**		
18	01	11	06	00	-18	32**	27**	

	1	2	3	4	5	6	7	8	9	10
11	18	17	05	-11	00	-41**	-26**	10	03	40**
13	02	02	27**	23*	05	12	-09	-02	-17	04
14	13	14	08	11	15	-15	-17	10	-02	07
15	-07	-04	08	35**	12	13	00	-02	-11	00
16	08	11	05	19	06	02	-01	-11	01	05
12	50**	39**	14	-04	14	-17	-44**	-02	-27**	33**
17	23*	23*	09	-26**	-17	-16	-23*	-02	07	23*
18	20*	20*	13	-08	-05	-18	-27**	02	-01	23*

Appendix F (Cont'd)

Younger Girls in Spring

Construct No.	1	2	3	4	5	6	7	8	9	10
1										
2	69**									
3	26*	35**								
4	11	26*	52**							
5	07	12	-01	34**						
6	-14	-09	-04	27*	58**					
7	-66**	-69**	-55**	-30**	06	30**				
8	-57**	-59**	-43**	-48**	-30**	-19	42**			
9	-20	-30**	02	-33**	-70**	-49**	-04	47**		
10	43**	42**	40**	05	-32**	-53**	-57**	-17	24*	

	11	13	14	15	16	12	17	18
11								
13	20							
14	27*	24*						
15	28**	38**	37**					
16	22*	22*	-05	04				
12	09	11	11	-03	-13			
17	01	-07	-10	-31**	00	35**		
18	-04	-03	-13	-21	-13	26*	14	

	1	2	3	4	5	6	7	8	9	10
11	17	19	06	05	11	-09	-22*	08	-06	21
13	-09	05	28**	43**	09	08	-19	-09	-14	22*
14	01	08	-09	02	10	-13	-04	13	-04	08
15	-15	00	05	27*	16	-03	-05	12	-07	03
16	03	01	08	08	-05	-06	-05	01	05	14
12	52**	40**	04	02	10	-06	-40**	-25*	-23*	28**
17	35**	30**	08	-16	-10	-08	-28**	-21	-02	24*
18	13	14	11	-03	-19	-19	-26*	-05	11	24*

Appendix F (Cont'd)

Older Boys in Spring

Construct No.	1	2	3	4	5	6	7	8	9	10
1										
2	53**									
3	20	51**								
4	-02	21*	48**							
5	18	26*	24*	38**						
6	-16	-20	-14	13	35**					
7	-57**	-60**	-58**	-18	-03	34**				
8	-40**	-57**	-57**	-42**	-29**	05	47**			
9	-07	-27**	-15	-40**	-69**	-42**	00	28**		
10	32**	41**	30**	-12	-29**	-59**	-53**	-20	27**	

	11	13	14	15	16	12	17	18
11								
13	33**							
14	40**	14						
15	30**	33**	32**					
16	29**	20	-04	04				
12	11	23*	-02	-03	08			
17	-07	-12	-21*	-35**	-13	03		
18	05	08	-07	-15	-03	33**	10	

	1	2	3	4	5	6	7	8	9	10
11	20	26*	08	14	18	-17	-20	06	-19	26*
13	08	25*	35**	28**	09	-10	-17	-19	-16	26*
14	-06	08	00	15	09	-11	-06	16	-08	08
15	-07	05	18	41**	20	07	-02	01	-23*	-07
16	17	01	05	05	00	-01	-01	-01	-04	05
12	40**	25*	14	04	19	-08	-19	-06	-25*	18
17	26*	06	08	-19	-10	-05	-23*	-17	18	12
18	25*	11	08	-17	04	-25*	-24*	00	00	23*

Appendix F (Cont'd)

Older Girls in Spring

Construct No.	1	2	3	4	5	6	7	8	9	10
1										
2	56**									
3	26*	47**								
4	-02	24*	45**							
5	-07	01	12	36**						
6	-17	-09	-06	08	50**					
7	-67**	-64**	-55**	-20	08	28*				
8	-35**	-59**	-40**	-36**	-30**	-17	40**			
9	-07	-15	-08	-36**	-59**	-36**	06	35**		
10	41**	48**	31**	06	-29**	-44**	-51**	-17	16	
	11	13	14	15	16	12	17	18		
11										
13	24*									
14	33**	17								
15	15	41**	19							
16	24*	30**	08	16						
12	-13	-08	-02	-14	-06					
17	-14	-22*	-18	-44**	-13	41**				
18	-15	-16	-21	-38**	-07	38**	19			
	1	2	3	4	5	6	7	8	9	10
11	-03	-02	01	12	19	07	04	10	-21	02
13	-14	06	23*	36**	07	08	05	-07	-17	11
14	-01	03	-04	08	-20	-14	-01	17	04	11
15	-19	-04	09	27*	08	-01	06	05	01	-04
16	-05	14	22*	04	-09	-12	-05	-13	11	17
12	57**	29**	17	-09	00	-15	-46**	-15	-11	26*
17	32**	12	02	-18	-07	-13	-22*	-12	00	23*
18	34**	19	16	-02	-07	-21	-42**	-08	-05	28*

APPENDIX G*

Scale Correlations with the 18 Construct Measures

Within Sex-Age-Period (Fall_1 X Spring) Subgroups

*Notes for Interpreting the Contents of Appendix G.

1. Major listings of Unipolar and Bipolar Scales correspond to scale titles given in Appendixes A and B.
2. Column numbers (in parentheses) correspond to the 18 construct measures defined in Table 5 of the text.
3. Construct measures 1, 2, 3, 4, 5, 6, and 10 are defined solely by Bipolar Scales 12, 21, 16, 15, 4, 8, and 13, respectively. To avoid double listing, these Bipolar Scales are not in the major listing.
4. Row headings designate subgroups. For example, FYB refers to Younger Boys in Fall_1.
5. An "X" following the number signifies that it was excluded from the analyses for reasons given in the text.
6. An "R" following the scale number signifies that the original scale defined in Appendix A was reflected.
7. The "RS" following Bipolar Scale No. 2 signifies that this scale was reflected for boys but not for girls. Thus, for boys, higher values signify "Masculine," whereas for girls, higher values signify "Feminine."
8. The symbol "P-W" above a column indicates that correlations in that column are part-whole correlations with the construct measure. (See Table 5 in the text.)

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 1

										P-W							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.08	0.03	0.07	-.03	-.02	0.0	-.11	0.0	-.05	0.01	0.19	-.11	-.01	-.03	-.11	-.04	0.0	0.06
FOB	0.11	0.04	0.02	-.03	0.12	0.12	-.16	-.09	-.16	0.04	0.18	-.06	-.08	-.05	0.0	0.03	0.09	-.01
FYG	0.06	0.06	-.03	-.17	0.01	-.05	-.06	0.0	0.09	0.05	0.36	-.12	0.04	-.06	0.16	-.08	0.17	-.07
FOG	0.08	0.04	0.01	0.10	-.04	-.02	-.04	0.06	-.08	0.10	0.27	-.02	-.07	-.03	0.07	0.03	0.13	-.03
SYB	0.05	0.13	0.0	-.34	-.24	-.31	-.19	0.18	0.23	0.28	0.28	-.13	-.14	-.24	-.07	-.09	0.18	-.17
SOB	0.17	0.21	0.09	-.02	0.15	-.02	-.14	-.10	-.13	0.08	0.38	0.18	0.16	-.02	0.22	-.08	0.05	0.06
SYG	0.25	0.19	-.02	-.09	0.04	-.09	-.07	-.13	-.13	0.17	0.35	-.14	0.05	0.04	0.07	0.08	0.22	-.01
SOG	-.01	-.08	-.09	-.08	0.19	0.22	0.04	0.02	-.17	-.10	0.41	-.06	0.03	-.14	-.02	-.06	-.03	-.02

UNIPOLAR SCALE NO. 2

																P-W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.0	-.05	-.01	-.08	-.06	0.01	0.02	-.02	0.03	0.02	-.08	0.07	-.01	-.13	-.05	0.12	0.06	0.03
FOB	0.10	-.01	-.09	-.01	-.01	0.03	-.09	-.12	-.04	0.02	0.04	-.06	-.13	-.12	-.10	0.18	0.17	0.11
FYG	0.0	0.07	0.02	-.11	0.04	0.0	0.04	-.01	-.19	-.08	-.08	-.04	-.08	-.11	-.03	0.28	-.05	0.03
FOG	0.05	0.13	0.03	0.05	0.02	-.04	-.09	-.05	0.13	0.10	-.16	0.11	0.07	-.13	-.04	0.27	-.05	0.12
SYB	0.14	0.05	0.06	0.10	0.02	0.13	0.01	-.17	-.18	0.06	-.12	0.14	-.03	0.0	0.12	0.07	0.11	0.03
SOB	0.12	0.12	0.14	0.03	-.19	-.07	-.15	-.14	-.03	0.24	-.10	0.16	-.08	-.08	0.06	0.25	0.01	0.11
SYG	0.19	0.21	-.01	0.04	0.12	0.14	-.06	-.12	-.20	0.11	0.13	0.09	0.10	0.04	-.09	0.24	0.18	0.04
SOG	0.11	0.14	0.02	-.23	-.05	-.02	-.15	-.07	0.0	0.12	0.0	-.10	0.02	-.09	-.06	0.35	0.09	0.13

UNIPOLAR SCALE NO. 3

											P-W							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.06	-.04	-.03	-.19	-.11	-.06	-.08	0.19	0.29	0.06	0.51	0.06	-.01	0.12	0.07	0.01	-.11	0.08
FOB	0.08	0.17	0.11	-.03	0.0	0.0	-.16	-.01	0.01	0.09	0.40	0.08	0.04	0.09	0.20	0.01	-.06	0.02
FYG	0.10	0.02	0.0	-.03	-.07	0.02	-.09	0.0	0.01	0.02	0.49	0.22	-.05	0.14	0.02	0.07	0.03	0.13
FOG	0.20	0.21	0.03	0.02	0.09	-.13	-.14	-.18	-.03	0.22	0.50	0.16	0.28	0.14	0.13	0.10	0.18	-.08
SYB	0.07	0.06	0.08	-.02	-.02	-.22	-.13	0.13	0.03	0.24	0.56	0.06	0.26	0.17	0.24	0.06	-.13	-.09
SOB	0.0	0.15	0.02	0.07	0.10	-.16	-.09	-.01	-.07	0.11	0.48	0.19	0.13	0.16	0.15	0.09	-.08	0.10
SYG	0.02	-.02	-.03	-.09	0.04	-.11	-.05	0.23	0.05	0.07	0.55	0.03	0.24	0.26	0.02	-.09	-.07	-.06
SOG	-.15	-.08	0.12	0.13	0.11	0.03	0.04	0.11	0.06	0.0	0.40	0.16	0.15	0.09	0.08	-.21	-.13	-.14

UNIPOLAR SCALE NO. 4

																P-W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.09	0.07	0.11	0.08	0.01	0.07	-.06	-.06	-.06	0.01	-.07	0.08	0.04	0.08	0.03	0.22	-.04	0.03
FOB	0.01	0.0	0.05	0.04	0.03	0.08	0.11	-.05	-.09	-.02	-.10	0.07	0.02	-.01	0.05	0.27	-.02	0.12
FYG	0.21	0.09	0.02	0.18	-.15	-.06	-.13	0.01	0.06	0.16	-.03	0.13	0.11	0.10	0.12	0.37	-.03	0.14
FOG	0.11	0.16	0.19	0.14	0.04	-.27	-.15	-.06	0.20	0.22	-.04	0.27	0.11	-.02	0.04	0.40	0.11	0.23
SYB	0.02	-.06	0.07	0.03	-.07	-.06	-.01	0.12	-.02	0.04	0.13	0.09	0.04	0.02	-.09	0.20	0.16	0.14
SOB	-.03	0.06	0.14	-.01	-.03	-.18	-.11	-.01	0.13	0.18	0.12	0.04	-.04	-.16	0.06	0.29	0.07	0.17
SYG	0.14	0.19	-.05	-.06	0.06	-.14	-.11	-.06	-.20	0.08	0.03	0.15	0.21	0.18	-.07	0.27	-.06	0.06
SOG	0.12	0.04	0.03	-.12	-.18	-.10	-.06	0.14	0.24	0.09	0.08	0.08	0.15	0.11	0.04	0.22	0.09	-.09

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 5

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	P-W (11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.07	-.11	-.20	-.02	0.09	0.09	0.18	0.17	-.11	-.20	0.27	0.0	-.03	0.11	-.08	-.07	-.08	-.12
FOB	-.02	0.10	-.15	0.02	0.06	-.05	-.08	-.08	-.13	0.02	0.29	0.08	0.06	0.12	-.05	-.09	0.04	0.03
FYG	0.07	-.01	-.16	-.35	0.0	0.04	-.02	0.10	0.0	-.05	0.38	0.0	0.11	-.19	0.04	-.03	0.25	-.02
FOG	0.04	-.02	0.0	-.16	-.11	-.02	0.0	0.13	-.06	0.06	0.44	0.21	0.10	0.04	0.03	0.0	0.11	-.05
SYB	0.03	0.05	-.13	-.25	-.12	-.29	-.08	0.14	0.12	0.29	0.45	-.09	0.02	-.02	0.0	-.13	0.02	-.05
SOB	0.05	0.17	-.04	0.02	0.17	-.04	-.06	0.05	-.20	0.15	0.66	0.17	0.28	0.21	0.13	-.03	-.13	0.05
SYG	0.10	0.07	-.14	-.11	0.0	-.20	-.05	0.19	0.03	0.16	0.61	-.09	0.22	0.20	0.09	0.0	0.0	-.08
SOG	-.03	-.10	-.12	-.06	0.07	0.05	0.15	0.15	-.22	-.06	0.54	0.02	0.22	-.09	-.01	-.08	-.01	-.09

UNIPOLAR SCALE NO. 6

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	P-W (12)	(17)	(18)
FYB	0.12	0.04	-.16	-.04	0.11	0.06	0.03	0.04	-.10	-.02	0.11	0.10	0.08	-.03	-.02	0.41	0.23	-.01
FOB	0.18	0.15	-.11	-.02	0.12	0.09	-.08	-.05	-.21	0.10	0.11	0.13	-.04	0.01	-.01	0.47	0.25	0.16
FYG	0.21	0.18	-.10	-.11	-.11	-.11	-.07	0.02	-.04	0.03	0.01	0.13	-.02	0.08	-.04	0.37	0.20	0.10
FOG	0.21	0.23	0.16	-.02	0.06	-.14	-.24	-.19	-.05	0.08	-.01	0.26	0.14	0.07	-.10	0.56	0.02	0.33
SYB	0.23	0.27	-.04	-.20	0.04	-.24	-.23	0.13	-.13	0.29	0.08	-.13	0.02	-.14	-.19	0.57	0.12	0.22
SOB	0.27	0.14	0.04	-.05	0.17	-.05	-.08	-.04	-.21	0.14	-.05	0.10	-.02	-.11	0.01	0.68	0.04	0.28
SYG	0.26	0.25	-.13	-.15	0.13	0.08	-.17	0.0	-.18	0.14	0.06	0.06	0.17	-.01	-.08	0.60	0.23	0.08
SOG	0.30	0.24	0.05	-.16	0.05	-.09	-.28	-.11	-.12	0.20	-.04	-.11	0.05	-.18	0.03	0.66	0.32	0.25

UNIPOLAR SCALE NO. 7

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	P-W (11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.06	0.23	0.08	0.12	0.14	-.05	-.16	-.01	-.03	0.04	0.70	0.20	0.23	0.12	0.18	0.17	0.04	0.03
FOB	0.12	0.23	0.20	0.05	-.12	-.24	-.40	-.07	0.03	0.30	0.71	0.32	0.17	0.12	0.12	0.28	0.11	0.10
FYG	0.13	0.22	0.16	0.14	-.02	-.07	-.34	-.15	-.01	0.23	0.74	0.28	0.12	0.07	0.39	0.18	0.18	0.09
FOG	0.11	0.16	0.14	0.09	-.10	-.24	-.27	-.19	0.05	0.31	0.78	0.26	0.24	0.04	0.32	0.06	0.24	-.15
SYB	0.18	0.17	0.14	-.15	-.10	-.41	-.31	0.08	0.06	0.35	0.81	0.29	0.18	0.07	0.15	0.13	-.06	0.18
SOB	0.20	0.18	0.13	0.14	0.08	-.23	-.19	0.08	-.10	0.28	0.78	0.28	0.33	0.26	0.26	0.13	-.01	0.03
SYG	0.19	0.22	0.16	0.16	-.07	-.18	-.26	-.02	0.02	0.32	0.70	0.20	0.18	0.14	0.25	0.15	0.10	0.10
SOG	0.05	0.04	-.08	0.09	0.04	0.02	-.05	0.04	-.10	0.10	0.66	0.09	0.18	0.06	0.22	-.03	-.08	0.03

UNIPOLAR SCALE NO. 8

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	P-W (12)	(17)	(18)
FYB	0.37	0.36	0.20	0.10	-.03	-.25	-.40	-.26	-.13	0.34	0.12	0.30	0.09	0.03	0.02	0.65	0.24	0.25
FOB	0.35	0.27	0.12	-.19	-.30	-.23	-.34	-.06	0.13	0.31	0.12	-.05	0.04	-.15	0.04	0.53	0.30	0.24
FYG	0.40	0.32	0.33	0.25	-.08	-.24	-.34	-.25	0.02	0.35	0.07	0.18	0.20	0.0	0.18	0.70	0.19	0.34
FOG	0.38	0.35	0.27	0.16	0.06	-.22	-.34	-.32	0.0	0.33	0.02	0.23	0.05	-.02	-.06	0.68	0.26	0.29
SYB	0.26	0.23	0.03	0.0	0.06	-.17	-.29	-.06	-.18	0.12	0.08	0.01	0.07	-.04	-.05	0.60	0.09	0.25
SOB	0.27	0.10	0.06	0.08	0.0	-.16	-.12	0.09	-.12	0.20	0.29	0.18	0.11	0.03	0.08	0.61	0.05	0.16
SYG	0.39	0.24	0.09	0.04	0.05	-.15	-.37	-.20	-.14	0.26	0.07	0.17	0.04	0.01	-.04	0.61	0.25	0.20
SOG	0.47	0.26	0.15	0.05	-.09	-.26	-.37	-.15	-.15	0.29	-.19	0.02	-.06	-.08	-.01	0.66	0.32	0.39

UNIPOLAR SCALES

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UNIPOLAR SCALE NO.  9

      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
 FYB  -.08  -.15  -.21  -.19  -.08  -.05  0.08  0.21  0.07  0.05  0.10  -.14  0.0   -.10  0.04  -.12  -.02  -.06
 FOB  0.05  0.11  -.03  -.36  -.19  -.29  -.08  0.10  0.20  0.31  0.19  0.01  -.10  -.08  0.02  -.04  0.0   -.03
 FYG  0.12  0.16  -.02  -.05  -.21  -.10  -.18  0.0   0.22  0.14  0.11  -.05  0.01  0.0   0.19  0.0   -.09  0.0
 FOG  0.04  -.04  -.03  -.13  -.09  -.02  -.02  -.02  0.07  -.04  0.07  -.13  0.18  -.12  -.01  -.10  -.15  -.02
 SYB  0.14  0.18  -.11  -.14  -.17  -.30  -.24  0.21  0.02  0.34  0.28  -.01  0.02  0.0   0.05  0.16  0.16  0.0
 SOB  0.08  -.03  -.14  -.29  -.05  -.17  0.02  0.30  0.06  0.20  0.38  0.11  0.14  0.03  0.30  0.04  -.03  0.15
 SYG  0.15  0.18  -.04  -.33  -.33  -.38  -.19  0.19  0.32  0.36  0.25  -.19  0.05  0.01  0.14  0.06  0.19  0.0
 SOG  0.03  0.06  -.05  -.09  -.34  -.22  -.07  0.18  0.25  0.18  0.13  -.07  0.14  -.04  0.03  -.02  0.0   0.05
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```
UNIPOLAR SCALE NO. 10

      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
 FYB  0.06  0.06  -.07  -.21  -.15  -.25  -.09  0.01  0.17  0.26  0.13  0.19  0.08  0.03  0.01  0.20  0.21  0.14
 FOB  0.14  0.11  -.03  -.41  -.27  -.27  -.15  0.20  0.23  0.35  0.04  -.02  0.0   -.08  0.07  0.06  0.24  0.05
 FYG  0.20  0.15  -.08  -.10  -.29  -.24  -.21  0.02  0.30  0.28  0.11  0.18  0.07  0.20  0.13  0.11  0.19  0.06
 FOG  0.10  0.01  0.12  -.02  -.29  -.20  -.08  0.13  0.08  0.19  0.08  0.17  0.10  -.10  0.07  0.20  0.14  0.14
 SYB  0.12  0.12  0.03  -.28  -.19  -.36  -.21  0.30  0.23  0.32  0.30  0.01  0.04  -.06  0.12  0.14  0.08  0.18
 SOB  0.10  0.06  -.23  -.38  -.09  -.23  0.01  0.24  0.01  0.23  0.21  0.05  0.07  -.10  0.10  0.18  0.06  0.29
 SYG  0.11  0.13  -.08  -.16  -.22  -.38  -.21  0.22  0.26  0.27  0.15  0.09  0.18  0.07  0.02  0.13  0.06  0.07
 SOG  0.17  0.17  0.02  -.25  -.19  -.21  -.17  0.11  0.13  0.30  0.03  -.07  0.04  -.04  0.01  0.27  0.15  0.14
```

```
UNIPOLAR SCALE NO. 11

                                                                P-W
      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
 FYB  -.22  -.11  -.14  0.11  0.11  0.01  0.12  0.14  0.02  -.14  0.37  0.10  0.07  0.06  0.18  -.11  -.13  -.14
 FOB  0.01  -.04  -.01  0.10  0.07  0.03  -.09  0.10  -.08  -.02  0.52  0.36  0.03  0.14  0.03  0.16  0.05  -.01
 FYG  -.04  -.01  0.07  0.11  0.03  0.05  -.07  0.08  -.01  -.16  0.43  0.20  -.03  0.08  0.20  0.01  -.06  -.04
 FOG  -.16  -.14  0.07  0.20  -.05  -.07  0.08  0.24  0.10  -.01  0.39  0.25  0.07  0.22  0.03  0.0   0.03  0.05
 SYB  0.0   0.11  0.01  0.12  0.14  -.17  -.14  0.07  -.21  0.11  0.41  0.14  0.03  0.23  0.04  0.17  -.14  0.06
 SOB  -.14  -.04  0.03  0.15  0.09  -.17  -.03  0.18  -.19  0.02  0.39  0.08  0.16  0.28  0.06  0.02  -.22  0.0
 SYG  -.14  -.07  -.03  0.01  0.18  0.10  0.03  0.23  -.06  -.07  0.50  0.09  0.06  0.20  0.13  -.05  -.13  -.02
 SOG  -.01  -.04  -.19  0.04  0.11  -.02  -.08  0.14  -.10  -.05  0.35  0.07  0.24  0.19  -.05  0.05  -.05  -.01
```

```
UNIPOLAR SCALE NO. 12

                                                                                          P-W
      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
 FYB  0.04  0.03  0.05  0.0   -.04  -.09  -.08  0.03  -.13  0.12  0.08  0.24  0.02  0.03  0.09  0.43  0.12  0.13
 FOB  0.0   0.12  -.09  0.0   -.04  -.03  -.04  0.07  -.11  0.04  0.22  0.12  0.0   0.07  0.0   0.27  0.06  0.0
 FYG  0.01  0.09  0.17  0.08  0.04  0.04  0.0   -.03  -.12  0.0   -.03  0.23  0.11  0.09  -.13  0.32  -.02  0.05
 FOG  0.01  0.09  0.12  0.20  -.06  -.01  0.0   -.01  0.05  0.04  -.19  0.05  0.11  -.02  -.12  0.37  -.06  0.18
 SYB  0.25  0.13  0.09  -.15  -.01  -.26  -.19  0.14  -.03  0.21  0.09  -.08  -.06  -.17  -.19  0.35  0.02  -.06
 SOB  -.13  0.04  -.03  -.02  0.03  0.06  0.07  0.14  -.12  -.08  0.02  0.14  0.11  0.16  -.03  0.33  -.16  0.12
 SYG  0.10  0.20  0.03  0.13  0.12  0.03  -.17  -.09  -.22  0.13  0.19  0.10  0.09  0.10  -.07  0.43  0.11  0.21
 SOG  0.15  -.05  -.01  0.16  -.10  -.22  -.23  0.12  -.06  0.20  0.07  -.11  0.11  -.04  -.15  0.25  0.11  0.27
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UNIPOLAR SCALES

UNIPOLAR SCALE NO. 13

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	P-W (11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.02	0.04	0.04	0.15	-.04	-.04	-.06	-.02	0.0	0.01	0.47	0.24	0.01	0.18	0.20	0.05	-.16	-.04
FOB	0.08	0.14	0.17	0.28	0.22	0.11	-.17	-.10	-.18	0.0	0.48	0.24	0.17	0.25	0.09	0.04	-.17	-.05
FYG	-.01	-.06	-.05	0.06	0.08	0.13	-.06	-.03	-.16	-.12	0.47	-.02	0.15	0.12	0.19	0.07	-.07	-.05
FOG	0.04	0.09	0.24	0.15	-.08	-.10	-.16	-.07	-.08	0.16	0.47	0.29	0.16	0.19	-.02	-.04	0.15	-.08
SYB	0.02	0.03	0.03	0.04	-.03	0.05	-.02	-.05	-.05	-.02	0.32	0.32	0.06	0.07	0.21	-.02	-.06	-.07
SOB	0.17	0.16	0.06	0.14	0.04	-.06	-.13	-.09	-.06	0.07	0.50	0.22	0.21	0.20	0.01	0.05	-.01	-.17
SYG	-.08	-.04	0.20	0.12	0.0	-.03	-.04	-.02	0.04	0.09	0.31	0.22	-.11	-.01	0.16	-.05	-.09	-.15
SOG	0.08	0.16	0.19	0.11	0.06	0.12	-.05	-.24	-.06	0.09	0.33	0.21	0.04	0.07	0.36	0.08	0.01	-.10

UNIPOLAR SCALE NO. 14

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	P-W (12)	(17)	(18)
FYB	0.11	0.17	0.13	0.16	-.02	-.04	-.10	-.03	-.04	0.12	0.08	0.24	0.05	0.18	-.01	0.35	-.01	0.0
FOB	0.05	0.06	0.19	0.24	0.04	-.08	-.12	0.01	0.02	0.07	-.01	0.12	0.10	-.05	0.25	0.22	-.19	0.15
FYG	0.09	0.13	0.12	0.16	-.20	-.06	-.10	-.04	-.06	0.19	0.13	0.16	0.08	0.08	0.23	0.28	-.08	0.14
FOG	0.10	0.02	-.04	0.04	0.05	-.01	0.0	-.06	-.16	0.08	0.08	0.08	0.06	0.10	0.06	0.22	0.08	-.02
SYB	0.21	0.21	0.15	0.18	0.15	0.13	-.14	-.18	-.24	0.01	0.02	0.09	-.05	0.15	0.10	0.25	0.09	0.02
SOB	0.19	0.20	0.13	0.17	0.16	0.14	-.22	-.18	-.15	0.15	0.08	0.12	-.03	0.11	-.14	0.23	0.10	0.06
SYG	0.04	0.06	0.08	0.09	-.04	-.02	-.03	-.05	0.0	0.01	0.11	0.01	-.11	-.02	0.09	0.09	0.01	-.13
SOG	0.02	-.05	0.02	-.01	-.06	0.04	0.01	-.05	0.12	0.09	-.01	0.04	-.04	0.06	0.04	0.19	0.16	-.05

UNIPOLAR SCALE NO. 15

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	P-W (11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.01	0.03	-.06	-.04	-.01	0.01	0.01	0.01	-.01	-.01	0.28	0.06	0.10	0.08	-.03	0.04	-.06	-.04
FOB	-.17	0.01	0.05	0.10	0.07	0.22	-.06	0.0	-.02	-.12	0.16	0.16	0.24	0.13	-.01	0.03	-.08	0.0
FYG	-.08	0.03	0.04	0.05	0.02	0.02	-.06	0.11	0.04	0.08	0.24	0.12	0.10	0.13	0.17	0.05	-.13	0.02
FOG	-.03	0.04	-.03	0.0	-.11	0.12	-.05	0.07	0.19	-.11	0.33	0.07	0.26	0.02	-.05	0.0	0.07	-.08
SYB	0.01	0.11	0.03	0.03	0.14	-.09	-.06	-.03	-.11	0.07	0.22	0.15	0.32	0.12	0.21	-.02	0.05	-.08
SOB	-.11	-.22	0.01	-.03	0.0	-.02	0.03	0.17	0.12	0.05	0.15	0.10	0.14	0.04	0.14	-.01	0.03	0.04
SYG	0.02	0.04	0.07	0.03	0.07	-.09	-.10	0.08	-.04	0.0	0.33	0.14	0.16	0.17	0.04	-.10	-.06	-.08
SOG	-.22	-.12	0.02	0.02	0.09	0.15	0.11	0.10	-.07	-.04	0.24	0.06	0.13	0.03	0.01	-.03	-.02	-.09

UNIPOLAR SCALE NO. 16

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	P-W (12)	(17)	(18)
FYB	0.16	0.18	0.12	0.17	0.10	0.06	-.07	-.07	-.15	0.01	-.02	0.13	-.09	0.07	-.14	0.24	0.06	-.01
FOB	0.02	-.02	0.01	0.14	0.06	0.11	0.02	0.03	0.02	-.06	-.07	-.10	-.06	-.10	0.24	0.06	-.11	0.07
FYG	0.05	-.04	-.05	0.05	-.07	-.02	-.02	0.05	-.01	0.03	0.15	0.04	0.09	0.04	0.20	0.06	-.11	0.02
FOG	0.06	0.02	-.03	0.08	-.17	-.07	-.06	-.09	0.07	-.01	-.06	0.03	0.07	0.07	-.01	0.15	0.04	0.16
SYB	0.01	0.06	0.08	0.09	-.06	-.10	-.08	0.06	-.06	0.0	0.09	0.15	0.02	0.10	0.04	0.12	-.08	0.06
SOB	-.05	0.12	0.14	0.11	0.0	0.03	-.01	0.0	-.09	-.02	-.06	0.10	0.14	0.04	0.07	0.24	-.10	-.08
SYG	0.08	0.06	-.01	-.08	-.04	-.08	-.09	0.01	-.04	0.01	-.01	-.09	-.05	0.07	0.03	0.21	0.14	0.01
SOG	0.01	-.11	0.01	-.11	0.05	0.02	0.07	0.04	0.08	-.06	-.16	-.06	-.08	-.11	-.08	0.26	0.19	0.10

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 17

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.18	0.18	0.12	0.01	0.01	-.11	-.19	-.04	-.09	0.17	0.22	0.27	0.19	-.03	-.07	0.37	0.12	0.07
FOB	0.12	0.14	0.29	0.15	0.12	-.14	-.23	0.01	-.06	0.19	0.34	0.34	0.26	0.12	0.12	0.16	-.04	0.08
FYG	0.12	0.11	0.08	0.21	-.19	-.25	-.17	-.11	0.02	0.24	0.07	0.26	0.32	0.18	0.17	0.25	-.02	0.14
FOG	0.19	0.26	0.23	0.12	0.22	-.28	-.24	-.23	-.15	0.11	0.05	0.33	0.27	0.21	0.05	0.42	0.06	0.26
SYB	-.01	0.09	0.05	0.14	0.20	-.09	-.03	-.07	-.15	0.04	0.20	0.05	0.09	0.12	0.10	0.03	-.12	-.02
SOB	0.09	0.09	0.07	0.14	0.06	-.19	-.09	0.06	-.10	0.11	0.13	0.06	0.14	0.24	-.05	0.17	-.21	0.02
SYG	-.04	0.09	0.27	0.15	-.13	-.22	-.20	-.01	0.14	0.21	0.06	0.08	0.02	0.14	-.02	0.07	0.0	0.07
SOG	0.08	0.05	0.10	0.22	0.06	-.17	-.12	0.03	-.18	0.11	-.01	0.0	0.22	0.11	-.07	0.18	-.02	0.04

UNIPOLAR SCALE NO. 18

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.02	0.15	0.11	-.06	-.19	-.09	-.09	0.03	0.21	0.11	0.31	0.03	-.09	-.16	0.04	0.03	0.09	0.08
FOB	0.01	0.11	0.02	0.05	-.08	-.13	-.09	0.05	0.14	0.09	0.19	0.23	-.01	0.03	0.0	0.07	-.04	-.03
FYG	-.02	-.02	-.12	-.05	-.10	0.03	-.06	0.10	0.10	-.03	0.34	0.09	0.07	0.02	0.13	0.02	0.06	-.16
FOG	-.06	-.02	0.23	0.0	0.04	-.07	-.03	-.12	-.07	-.04	0.11	0.21	0.04	0.07	-.07	0.10	0.12	-.08
SYB	0.11	0.08	0.03	0.06	-.07	-.18	-.11	-.08	-.01	0.14	0.35	0.08	0.22	0.10	0.17	0.07	0.08	0.0
SOB	0.19	0.14	0.05	-.01	-.02	-.16	-.11	0.04	0.18	0.30	0.26	0.10	0.13	0.03	0.13	0.02	0.02	0.01
SYG	0.12	0.17	0.08	0.09	0.11	-.12	-.17	0.04	-.03	0.11	0.33	0.08	0.13	0.10	0.08	-.01	0.04	-.13
SOG	0.02	0.03	0.02	-.01	-.04	-.15	0.02	0.05	0.02	0.12	0.24	0.06	0.07	0.04	0.15	-.13	-.12	0.0

UNIPOLAR SCALE NO. 19

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.22	0.15	0.14	-.14	-.24	-.40	-.32	-.10	0.22	0.38	-.06	0.05	-.07	-.19	-.18	0.12	0.15	0.19
FOB	0.23	0.09	0.32	0.13	-.12	-.33	-.21	-.05	0.11	0.34	0.01	0.21	0.0	0.06	0.08	0.32	0.16	0.04
FYG	0.31	0.24	0.26	0.13	-.22	-.37	-.32	-.13	0.28	0.40	0.13	0.25	0.03	-.06	0.02	0.36	0.21	0.34
FOG	0.22	0.15	0.31	0.23	-.09	-.32	-.21	-.20	0.09	0.44	-.04	0.31	-.08	0.02	-.04	0.39	0.24	0.26
SYB	-.04	-.02	0.01	-.04	-.17	-.12	-.04	0.06	0.09	0.06	0.14	0.23	0.02	-.03	0.05	0.14	0.11	0.17
SOB	0.09	0.08	0.13	0.0	-.09	-.09	-.05	-.12	0.11	0.21	-.04	0.17	-.12	-.16	-.03	0.18	0.06	0.24
SYG	0.17	0.02	0.03	-.10	-.07	-.03	-.16	-.08	-.02	0.16	0.02	0.26	0.02	-.17	-.06	0.28	0.24	0.15
SOG	0.12	-.01	-.08	-.12	-.19	-.21	-.07	0.13	0.06	0.10	-.15	-.09	-.13	-.11	-.17	0.30	0.25	0.23

UNIPOLAR SCALE NO. 20

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.04	-.01	0.0	-.04	-.19	-.02	-.01	0.09	0.11	0.06	0.30	0.05	0.01	-.02	0.29	-.03	-.16	0.08
FOB	-.01	0.07	-.08	-.08	-.08	-.04	-.04	0.01	0.08	0.12	0.17	0.07	-.06	0.13	0.07	0.02	0.0	-.04
FYG	0.06	0.05	0.08	-.06	-.14	-.03	-.07	-.09	0.10	0.07	0.19	0.03	0.11	-.15	-.06	0.09	0.07	0.20
FOG	0.02	0.04	0.24	0.0	0.05	-.10	-.05	-.10	-.06	0.01	0.15	0.25	0.06	0.03	-.10	0.16	0.03	0.01
SYB	0.07	0.17	0.02	0.03	0.0	-.10	-.08	0.06	-.03	0.17	0.06	0.09	0.02	0.10	0.11	0.03	-.02	0.06
SOB	[illegible]	0.03	0.05	-.05	-.02	-.08	-.07	0.01	0.10	0.13	0.18	0.0	-.03	-.03	0.06	0.05	0.05	0.06
SYG	0.09	0.08	-.02	0.28	-.04	-.10	-.03	0.07	-.06	0.16	0.23	0.13	0.06	0.05	0.08	0.04	0.04	-.05
SOG	0.09	0.10	0.11	0.07	-.03	-.09	-.10	-.09	-.01	0.06	0.03	0.07	-.01	0.05	0.04	0.09	0.13	0.05

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 21 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.10	0.0	0.02	-.06	-.14	-.16	-.09	-.08	0.06	0.13	0.01	0.02	-.04	-.10	-.07	0.06	0.16	0.15
FOB	0.11	0.0	0.05	0.08	-.09	-.22	-.11	0.04	0.08	0.08	0.05	0.02	0.02	-.11	0.05	0.09	-.02	-.05
FYG	0.09	0.11	0.09	0.18	-.20	-.14	-.13	-.05	0.0	0.10	0.06	0.13	0.22	0.06	-.08	0.02	0.06	0.07
FOG	0.01	-.02	-.02	0.0	-.17	-.07	-.03	0.03	0.10	0.06	-.01	0.05	-.07	0.07	-.07	0.0	-.08	-.08
SYB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOB	-.09	0.06	0.05	0.09	-.04	0.0	0.01	-.02	-.05	-.09	0.01	0.08	0.04	0.04	0.17	0.18	-.16	-.13
SYG	0.04	0.05	-.01	-.08	-.12	-.02	0.09	0.05	0.10	0.14	0.06	0.02	0.07	0.10	-.02	-.09	0.13	-.08
SOG	0.10	0.11	0.12	0.13	-.06	-.07	-.10	-.09	0.03	0.05	0.05	0.03	0.03	0.07	0.03	0.05	0.10	0.01

UNIPOLAR SCALE NO. 22

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.39	-.40	-.57	-.08	0.13	0.22	0.57	0.50	0.02	-.39	0.09	-.05	-.05	-.11	-.03	-.16	-.03	-.26
FOB	-.27	-.14	-.35	-.04	0.22	0.07	0.22	0.31	-.04	-.19	0.16	0.02	0.20	0.12	-.05	0.08	-.07	-.03
FYG	-.08	-.15	-.23	-.14	0.09	0.24	0.18	0.24	0.0	-.31	0.11	0.05	0.01	0.06	0.10	0.0	-.01	-.14
FOG	-.17	-.22	-.20	-.18	0.09	0.12	0.30	0.32	0.06	-.32	0.06	0.0	0.05	0.05	0.01	-.02	-.01	0.04
SYB	-.21	-.24	-.44	-.08	0.18	0.19	0.33	0.33	-.03	-.20	0.08	-.11	0.0	0.03	0.04	-.10	-.18	-.11
SOB	-.16	-.29	-.51	-.14	0.12	0.22	0.38	0.36	-.08	-.28	0.09	-.15	0.12	0.04	0.07	0.02	-.15	-.04
SYG	-.32	-.33	-.52	-.22	0.09	0.18	0.47	0.44	-.05	-.38	0.07	-.06	0.17	0.21	-.03	-.12	-.27	-.25
SOG	-.19	-.32	-.27	-.03	0.08	0.18	0.33	0.37	0.09	-.29	0.12	0.07	0.13	0.16	-.05	-.14	-.20	-.18

UNIPOLAR SCALE NO. 23

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.21	-.28	-.15	-.15	-.14	0.0	0.26	0.28	0.23	-.06	-.03	-.04	-.02	-.10	0.04	-.07	0.07	-.09
FOB	-.13	-.17	-.12	-.14	-.15	-.05	0.30	0.23	0.20	-.04	-.10	-.06	0.0	-.02	-.15	-.13	-.08	-.14
FYG	-.11	-.07	-.17	-.04	0.02	0.01	0.17	0.05	-.01	-.03	-.02	-.04	-.08	0.03	0.03	-.12	-.09	-.11
FOG	0.02	0.10	0.01	-.09	-.10	-.05	-.01	0.05	-.10	-.01	0.03	0.06	-.07	0.08	-.05	-.08	0.11	-.08
SYB	-.15	-.18	-.01	0.0	-.28	-.10	0.07	0.07	0.13	-.09	0.11	-.02	0.0	-.03	0.09	-.08	-.04	-.07
SOB	-.13	-.21	-.37	-.21	-.25	0.01	[illegible]	0.28	0.16	-.03	-.03	-.08	-.04	-.03	0.03	0.08	-.11	0.02
SYG	0.01	0.0	-.01	-.24	-.18	-.09	[illegible]	0.28	0.24	0.14	0.21	-.01	-.01	0.03	0.17	0.01	0.04	0.01
SOG	-.15	-.07	-.22	0.10	0.07	0.03	[illegible]	-.04	-.08	-.09	-.03	0.11	0.11	0.16	0.04	-.07	-.12	-.05

UNIPOLAR SCALE NO. 24

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.09	-.11	0.04	-.16	-.25	-.29	-.07	0.17	0.28	0.09	0.06	0.02	-.13	0.13	0.0	-.01	-.14	0.11
FOB	-.19	-.27	-.18	-.14	-.11	-.02	0.19	0.30	0.14	-.06	-.01	-.08	0.03	-.03	-.01	-.12	-.09	-.14
FYG	0.05	0.11	-.04	-.06	-.19	-.17	-.11	0.04	0.25	0.14	0.10	0.14	0.07	0.12	0.05	0.02	0.05	0.04
FOG	0.0	-.02	0.08	-.04	-.31	-.12	-.12	0.11	0.15	-.07	-.05	0.02	0.01	0.12	-.09	0.08	0.0	0.17
SYB	-.12	-.12	0.0	0.02	-.17	-.11	-.02	0.34	0.06	0.05	0.14	0.10	0.07	0.03	-.02	0.12	0.01	0.07
SOB	0.06	-.02	-.03	-.05	-.15	-.21	-.09	0.06	0.08	0.19	0.03	0.0	0.12	-.03	0.16	0.23	-.05	0.18
SYG	-.02	-.11	-.05	-.08	-.07	-.15	-.02	0.07	0.03	0.06	0.09	0.09	0.04	0.11	-.11	0.09	-.01	0.19
SOG	0.01	-.12	-.01	0.04	0.03	-.12	-.16	0.13	-.03	0.02	-.01	-.02	0.07	0.03	-.09	0.23	0.05	0.12

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 25

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.03	0.04	-.02	0.07	0.08	0.17	-.07	0.15	-.04	-.14	0.26	0.08	0.11	0.14	0.06	0.03	0.02	-.09
FOB	0.01	0.02	0.13	-.02	-.02	-.02	-.11	0.09	-.01	0.08	0.39	0.22	0.09	0.12	0.10	0.03	0.07	-.19
FYG	0.08	0.10	0.0	0.01	-.07	-.06	-.21	-.10	-.01	0.12	0.32	0.11	0.0	-.02	0.19	0.15	0.09	0.11
FOG	-.02	-.01	0.10	0.12	-.05	-.05	-.07	-.10	0.14	0.11	0.47	0.17	0.11	0.0	0.23	-.12	0.15	-.23
SYB	-.01	0.10	0.03	0.01	-.07	-.17	-.10	-.01	0.05	0.24	0.39	0.12	0.07	0.12	0.22	0.02	-.03	-.05
SOB	0.02	0.05	0.02	0.01	0.01	-.10	-.06	0.04	-.03	0.13	0.31	0.19	0.07	0.01	0.17	-.04	-.05	0.07
SYG	0.07	-.02	0.04	-.08	-.05	-.10	-.13	0.19	0.06	0.23	0.44	0.08	0.14	0.13	0.12	0.16	0.06	0.0
SOG	-.01	-.06	-.09	-.12	0.0	-.08	0.07	0.16	0.06	0.08	0.31	-.04	0.18	-.03	0.06	-.10	-.05	-.13

UNIPOLAR SCALE NO. 26 X

	(1)	(2)	(3)	(4)	(5)	[illegible]	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.08	0.05	-.04	0.04	0.03	[illegible]	-.07	-.02	0.04	0.04	0.04	0.12	-.02	0.12	-.07	0.18	0.05	0.01
FOB	0.01	-.09	0.12	0.03	-.09	-.02	-.08	-.07	0.08	0.07	0.08	0.02	0.15	0.04	0.19	-.03	0.10	-.03
FYG	0.23	0.26	0.06	-.01	-.08	-.05	-.19	-.14	-.04	0.12	-.01	0.07	-.04	0.02	-.03	0.33	0.08	0.23
FOG	0.22	0.12	-.01	0.0	0.17	0.07	-.11	-.14	-.12	0.11	-.12	-.08	-.06	-.05	-.03	0.22	-.03	0.04
SYB	0.15	0.11	0.08	0.01	0.03	-.16	-.14	0.0	0.0	0.11	0.15	0.07	0.11	0.11	-.08	0.29	0.09	0.10
SOB	0.03	-.06	-.10	-.15	0.05	-.13	0.01	0.12	0.01	0.07	0.06	-.02	-.08	-.07	-.09	0.18	-.04	0.31
SYG	0.03	-.07	-.11	-.03	-.05	-.19	-.09	0.11	0.04	0.11	0.0	0.13	0.18	0.11	0.09	0.24	0.07	0.08
SOG	0.12	0.03	0.12	0.06	0.04	-.10	-.09	0.13	0.07	0.08	0.0	0.04	-.02	0.09	0.03	0.11	0.02	0.17

UNIPOLAR SCALE NO. 27

										P-W							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.11	-.03	-.26	-.12	0.10	0.08	0.12	0.21	0.03	-.03	0.46	0.19	0.12	0.0	0.05	0.09	0.06	0.04
FOB	-.05	0.17	0.16	0.0	0.14	-.07	-.15	-.04	-.10	0.13	0.48	0.29	0.22	0.24	0.14	0.17	0.12	0.10
FYG	-.02	-.05	-.08	0.0	0.04	-.04	-.06	0.11	0.16	0.01	0.41	0.18	0.13	0.03	0.12	0.03	0.15	-.04
FOG	-.07	-.03	-.08	0.04	0.06	-.02	0.04	0.11	-.03	0.03	0.54	0.17	0.12	0.33	0.22	-.14	0.14	-.24
SYB	-.09	-.10	-.16	-.11	0.08	-.17	0.16	0.16	0.09	0.03	0.47	0.11	0.17	0.0	0.08	0.01	-.02	-.10
SOB	0.0	0.04	-.11	0.02	0.14	0.06	0.07	0.16	-.06	0.01	0.39	0.24	0.15	0.03	0.20	0.15	0.04	0.08
SYG	0.03	0.03	-.19	-.02	0.18	0.11	0.0	0.02	-.15	-.13	0.51	0.08	0.14	0.09	0.01	0.05	-.02	-.20
SOG	-.10	-.03	0.04	0.13	0.19	0.03	0.11	0.0	-.02	-.09	0.40	0.30	0.03	0.23	0.24	-.13	-.11	-.17

UNIPOLAR SCALE NO. 28

																P-W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.20	0.11	0.03	-.04	0.05	0.04	-.15	-.05	-.08	0.05	-.06	0.08	-.11	-.02	0.01	0.57	0.13	0.17
FOB	0.16	0.16	0.14	0.24	0.18	-.03	-.17	-.07	-.15	0.15	0.07	0.31	0.14	0.08	0.09	0.49	0.09	0.31
FYG	0.18	0.11	0.18	0.21	0.02	-.04	-.13	0.02	-.05	0.11	0.05	0.23	0.10	0.06	0.02	0.58	0.10	0.26
FOG	0.17	0.26	0.20	0.23	0.28	-.09	-.14	-.14	-.12	0.11	-.05	0.32	0.18	0.05	0.0	0.56	0.02	0.27
SYB	0.18	0.18	-.04	-.10	0.14	-.07	-.16	0.16	-.18	0.12	0.11	-.01	0.19	-.15	-.21	0.49	0.16	0.18
SOB	0.19	0.14	0.10	0.04	0.27	0.13	-.12	-.16	-.32	-.05	-.01	0.13	0.0	-.06	0.03	0.48	0.03	0.09
SYG	0.14	0.13	0.11	0.12	0.18	0.14	-.16	-.13	-.15	0.05	-.07	0.11	-.05	-.03	-.23	0.55	0.13	0.33
SOG	0.16	0.06	0.07	-.06	0.19	0.10	-.07	-.13	-.14	-.06	-.14	0.0	-.19	-.16	0.01	0.52	0.20	0.13

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 29

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.20	0.17	0.09	-.22	-.31	-.29	-.15	0.05	0.21	0.42	0.26	0.25	0.03	0.03	0.09	0.25	0.12	0.16
FOB	0.10	0.08	0.03	-.35	-.39	-.32	-.08	0.11	0.32	0.33	0.12	0.05	0.0	0.03	0.07	0.15	0.22	0.06
FYG	-.02	0.06	-.11	-.15	-.29	-.13	-.03	0.16	0.32	0.06	0.15	0.09	-.06	0.07	0.10	-.01	0.19	-.08
FOG	-.01	-.02	0.07	0.10	-.24	-.11	-.01	0.02	0.0	0.04	0.06	0.06	0.06	0.03	0.08	-.04	0.08	-.04
SYB	0.15	0.20	-.09	-.34	-.27	-.29	-.17	0.04	0.02	0.33	0.20	-.08	-.09	-.15	-.07	0.05	0.06	0.03
SOB	0.02	-.14	-.30	-.34	-.59	-.17	0.04	0.23	0.36	0.24	-.06	-.07	-.09	-.08	0.07	-.06	0.09	0.03
SYG	0.12	0.10	-.11	-.22	-.38	-.32	-.10	0.20	0.27	0.31	0.19	-.02	0.11	-.02	0.03	0.12	0.21	0.04
SOG	0.11	0.13	-.01	-.23	-.46	-.27	-.08	0.13	0.31	0.23	0.14	0.04	0.27	0.09	0.18	0.02	0.06	-.11

UNIPOLAR SCALE NO. 30

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.04	-.03	-.06	-.16	-.13	-.20	-.11	0.15	0.17	0.04	0.06	0.10	0.08	0.04	0.08	0.25	0.08	0.21
FOB	0.15	0.20	0.12	-.06	-.25	-.32	-.13	0.03	0.23	0.29	-.05	0.13	-.02	0.05	0.04	0.13	0.06	0.13
FYG	0.12	0.09	0.15	0.23	-.40	-.16	-.05	0.08	0.20	0.11	-.04	0.30	0.03	0.17	-.03	0.24	0.16	0.20
FOG	0.03	0.03	0.22	0.22	-.21	-.28	-.11	0.05	0.27	0.19	0.02	0.37	0.18	-.06	0.06	0.42	0.07	0.16
SYB	0.01	0.02	0.03	-.12	-.27	-.17	-.12	0.30	0.19	0.20	0.16	0.09	0.05	0.16	-.08	0.22	0.0	0.14
SOB	0.10	0.01	0.01	-.06	-.14	-.11	-.08	-.04	0.01	0.16	-.04	0.02	-.01	-.10	0.03	0.19	0.06	0.12
SYG	0.13	0.12	0.05	-.03	-.06	-.16	-.12	-.08	0.07	0.17	0.16	0.0	0.01	-.03	-.08	0.20	0.17	0.23
SOG	0.09	-.01	-.13	-.02	-.06	-.08	-.02	0.01	0.03	0.12	0.04	-.05	-.06	-.11	0.0	0.35	0.16	0.09

UNIPOLAR SCALE NO. 31

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.38	0.33	0.28	-.04	-.02	-.17	-.36	-.23	-.01	0.31	0.11	0.17	0.09	-.06	-.07	0.40	0.33	0.37
FOB	0.32	0.21	0.15	0.0	0.01	-.09	-.32	-.11	-.10	0.14	-.05	0.09	0.02	-.18	-.20	0.41	0.39	0.27
FYG	0.48	0.39	0.31	0.16	0.04	-.22	-.45	-.31	-.06	0.23	0.02	0.12	0.04	-.20	-.05	0.43	0.33	0.41
FOG	0.54	0.44	0.34	0.05	0.23	-.22	-.48	-.36	-.08	0.30	-.11	0.17	0.03	-.08	-.22	0.56	0.31	0.58
SYB	0.36	0.31	0.32	-.12	0.01	-.11	-.39	-.07	0.02	0.26	-.07	0.06	0.02	-.12	-.18	0.32	0.29	0.35
SOB	0.37	0.16	0.02	-.09	0.18	-.07	-.18	-.17	0.0	0.20	-.11	-.01	-.24	-.21	-.13	0.31	0.16	0.42
SYG	0.33	0.24	0.01	-.04	0.01	-.07	-.30	-.16	-.06	0.07	-.14	-.20	0.04	-.23	-.20	0.40	0.24	0.37
SOG	0.37	0.14	0.13	-.02	0.05	-.09	-.35	-.12	-.07	0.10	-.18	-.29	-.17	-.14	-.21	0.40	0.28	0.41

UNIPOLAR SCALE NO. 32

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.02	0.01	0.0	0.11	0.03	-.01	-.05	0.05	-.06	0.09	0.09	0.26	0.19	0.27	0.14	0.15	0.14	-.10
FOB	-.12	0.06	0.17	0.23	0.13	0.03	0.01	0.06	-.08	0.02	0.14	0.37	0.28	0.45	0.28	-.07	-.19	-.21
FYG	0.14	0.17	0.01	0.16	-.11	0.05	-.17	-.09	0.04	0.13	0.25	0.36	0.10	0.25	0.18	0.17	0.01	0.10
FOG	0.15	0.18	0.22	0.26	-.03	-.14	-.20	-.17	-.02	0.25	0.30	0.28	0.21	0.20	0.37	0.11	0.16	-.13
SYB	0.10	-.01	0.09	0.17	0.07	0.09	0.01	-.10	-.08	0.06	0.12	0.30	0.20	0.36	0.30	-.01	-.10	-.10
SOB	0.01	-.01	0.16	0.20	-.01	0.01	-.06	-.03	-.09	0.07	0.22	0.28	0.16	0.45	0.16	0.01	-.12	-.18
SYG	-.05	0.06	0.14	0.30	0.22	0.22	-.01	-.08	-.21	0.09	0.30	0.42	0.04	0.28	0.31	0.0	-.05	-.22
SOG	0.01	0.06	0.03	0.17	-.05	-.03	-.01	-.03	-.07	0.03	0.24	0.45	0.29	0.35	0.29	0.06	-.17	-.13

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 33

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.16	0.11	-.10	0.11	0.09	-.03	-.07	-.06	-.10	0.11	0.02	0.05	-.09	-.03	-.06	0.22	0.18	-.05
FOB	0.0	0.06	0.02	-.18	0.03	-.18	-.07	-.15	0.06	0.16	0.01	0.15	0.04	-.06	-.09	0.05	0.20	0.07
FYG	-.01	0.02	0.09	0.07	-.06	-.06	-.09	-.08	-.03	0.07	0.03	0.13	0.09	-.01	0.02	0.0	0.07	0.04
FOG	0.03	-.09	-.19	-.02	0.01	-.08	0.07	0.07	-.11	0.14	0.06	-.06	0.0	-.15	-.01	0.12	0.06	0.0
SYB	0.16	0.14	0.01	0.05	0.09	0.07	-.06	-.14	-.25	-.02	0.0	-.05	-.07	-.13	-.07	0.07	0.13	-.06
SOB	0.09	-.02	-.05	-.01	-.13	-.04	-.12	0.03	0.07	0.11	0.01	0.02	-.05	0.01	-.08	0.04	0.11	0.04
SYG	-.07	0.01	0.11	0.05	0.03	0.04	-.04	-.07	-.09	0.0	-.01	0.12	0.0	-.06	-.04	-.05	0.16	0.0
SOG	0.10	0.13	0.08	-.15	-.04	-.09	-.08	-.14	-.13	0.12	0.0	-.06	-.06	-.10	0.13	0.15	0.15	0.09

UNIPOLAR SCALE NO. 34 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.10	0.09	0.02	-.06	-.04	-.08	-.08	-.08	-.06	0.13	0.06	0.17	-.04	0.08	0.02	0.13	-.10	0.07
FOB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FYG	0.14	0.07	-.04	-.20	-.06	-.12	-.07	-.06	0.03	0.08	0.16	-.11	0.07	-.17	-.04	0.11	0.05	0.14
FOG	0.08	0.08	0.11	0.13	0.04	0.12	-.08	-.12	-.07	0.06	0.13	0.13	-.07	0.07	-.07	0.0	0.12	0.01
SYB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOB	0.08	0.18	0.02	0.05	0.13	-.06	-.12	-.04	-.09	0.02	0.38	0.08	0.25	0.12	0.03	-.05	-.12	-.09
SYG	-.06	0.0	0.23	0.25	-.06	-.08	-.09	-.09	0.06	0.15	0.03	0.11	-.06	0.16	0.21	-.02	-.08	-.08
SOG	0.02	-.15	0.09	-.16	-.08	0.03	-.02	0.29	0.12	-.17	0.10	0.08	0.11	0.10	0.04	-.05	0.01	-.12

UNIPOLAR SCALE NO. 35

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.08	0.08	-.01	-.07	-.13	-.07	-.09	0.03	0.02	0.05	0.25	0.06	0.03	0.16	0.0	0.16	-.12	0.07
FOB	0.07	0.09	0.12	0.06	-.01	-.01	-.09	0.12	0.0	0.06	0.23	0.23	0.24	0.15	0.18	0.03	-.09	0.02
FYG	0.05	0.11	0.09	0.05	-.07	0.02	-.06	-.11	-.06	0.05	0.01	0.04	0.16	0.12	-.02	0.05	-.06	0.12
FOG	0.16	0.04	0.06	0.10	0.14	-.13	-.08	-.02	-.14	0.04	0.02	0.09	0.08	0.02	0.09	0.23	0.11	0.01
SYB	0.11	-.01	-.07	-.13	0.08	0.07	0.07	0.12	-.03	-.07	0.04	-.12	0.06	-.07	0.0	0.26	0.02	-.10
SOB	-.01	0.07	0.12	0.01	0.11	-.17	-.13	-.01	-.06	0.10	0.05	0.0	0.06	0.01	0.02	0.16	-.11	0.24
SYG	0.20	0.16	0.06	0.02	-.15	-.14	-.19	-.04	0.04	0.24	0.25	-.04	-.07	0.06	0.04	0.08	0.07	0.10
SOG	0.13	0.09	-.03	-.03	0.04	0.11	-.04	-.02	-.13	0.08	0.08	0.08	0.0	0.04	-.04	0.07	0.12	-.02

UNIPOLAR SCALE NO. 36 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.0	0.03	0.03	-.05	-.07	-.02	-.02	0.03	0.04	0.04	0.25	0.01	0.03	-.16	0.19	-.11	-.09	0.12
FOB	0.07	0.12	0.06	0.02	0.11	0.10	-.12	-.07	-.11	0.12	0.22	0.11	0.06	0.13	0.12	-.01	0.05	0.05
FYG	0.09	0.05	0.03	0.11	-.13	0.07	-.10	-.17	-.22	0.0	0.17	0.11	-.04	0.12	0.09	0.02	-.06	0.12
FOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SYB	0.07	0.10	-.01	-.03	0.02	-.28	-.17	0.01	0.10	0.23	0.21	-.04	0.09	0.18	0.03	0.05	-.12	0.13
SOB	0.13	0.07	0.03	-.07	0.0	-.23	-.09	0.0	0.08	0.27	0.18	-.10	-.09	-.14	0.12	0.09	0.11	0.10
SYG	0.23	0.19	0.12	0.01	-.08	-.28	-.19	-.08	0.10	0.30	0.32	-.13	0.02	0.04	0.14	0.06	0.18	0.02
SOG	0.0	-.04	-.02	-.11	-.19	-.24	-.03	0.25	0.20	0.22	0.10	-.03	0.06	0.05	0.13	-.03	0.01	-.02

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 37

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.34	0.23	0.15	-.05	-.03	-.20	-.26	-.19	-.06	0.21	0.13	0.15	0.12	0.07	-.03	0.39	0.16	0.20
FOB	0.24	0.17	0.24	0.02	-.07	-.24	-.24	0.0	0.05	0.21	0.15	0.29	0.07	0.04	0.0	0.35	0.15	0.14
FYG	0.34	0.27	0.21	0.16	-.24	-.34	-.41	-.13	0.03	0.37	0.08	0.26	0.16	0.13	0.11	0.50	0.07	0.33
FOG	0.29	0.24	0.18	0.09	-.02	-.22	-.33	-.18	-.07	0.29	0.08	0.32	0.28	0.15	-.03	0.48	0.12	0.31
SYB	0.26	0.35	0.16	-.12	-.01	-.39	-.44	0.12	0.06	0.50	0.30	0.12	0.19	0.13	0.10	0.33	0.05	0.28
SOB	0.10	0.10	0.17	0.06	0.05	-.31	-.20	0.05	-.01	0.28	0.19	0.12	-.05	0.07	0.17	0.30	-.11	0.28
SYG	0.09	0.14	0.03	-.14	-.28	-.54	-.31	0.25	0.33	0.42	0.21	0.02	0.26	0.15	-.02	0.28	0.04	0.23
SOG	0.15	0.11	0.01	-.07	-.18	-.34	-.17	0.19	0.06	0.39	0.05	0.09	0.16	0.16	0.10	0.24	0.04	0.17

UNIPOLAR SCALE NO. 38 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.10	0.16	0.13	0.09	-.02	-.07	-.13	-.07	-.01	0.18	0.07	0.18	-.06	-.09	-.05	0.09	0.17	-.05
FOB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FYG	0.03	0.09	0.11	0.14	-.15	-.08	-.09	-.04	0.02	0.06	0.08	0.20	0.16	-.03	0.02	0.01	0.14	0.10
FOG	0.07	0.04	0.15	0.09	0.05	-.17	-.01	-.06	0.02	0.16	0.16	0.22	0.13	0.03	-.10	0.07	-.04	0.01
SYB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SYG	-.06	0.0	-.01	-.01	-.06	-.08	0.02	0.08	0.11	-.06	-.10	-.08	-.06	0.07	0.11	0.03	0.02	0.09
SOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

UNIPOLAR SCALE NO. 39

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.14	0.22	0.17	0.10	0.05	-.15	-.18	0.01	0.06	0.22	0.13	0.28	-.03	-.07	0.0	0.18	0.22	0.07
FOB	0.10	0.07	0.20	0.16	0.07	-.09	-.19	0.06	-.08	0.07	0.15	0.24	0.11	0.13	-.03	0.13	0.08	-.11
FYG	0.18	0.10	0.12	0.26	-.34	-.21	-.16	0.0	0.08	0.21	0.15	0.33	0.19	0.15	0.13	0.20	0.07	0.25
FOG	0.12	0.15	0.25	0.23	0.19	-.18	-.16	-.13	-.13	0.26	0.01	0.30	0.16	0.12	0.08	0.38	0.11	0.10
SYB	0.16	0.16	0.11	0.15	0.0	0.01	-.14	-.13	-.12	0.07	-.01	0.06	0.0	-.01	-.02	0.14	0.03	-.05
SOB	0.01	0.11	0.13	0.23	0.11	-.06	-.05	-.13	-.14	-.01	-.03	0.02	0.05	0.09	-.08	0.05	0.0	-.01
SYG	0.18	0.10	0.07	0.07	0.07	-.03	-.12	-.15	0.01	0.21	-.09	0.03	0.02	-.11	-.03	0.02	0.07	-.10
SOG	0.16	0.15	0.03	0.03	-.08	-.16	-.15	0.0	-.03	0.23	-.03	0.07	0.02	-.21	0.05	0.16	0.14	0.15

UNIPOLAR SCALE NO. 40 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FOB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FYG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SYB	-.07	0.0	-.07	-.07	-.14	-.07	-.03	0.02	0.03	0.04	0.11	-.05	-.05	-.10	0.03	-.12	0.07	0.0
SOB	-.08	-.01	-.09	-.07	-.21	-.06	0.02	0.21	0.10	0.13	0.05	-.02	-.06	-.02	0.15	0.01	-.03	0.07
SYG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 41

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.12	0.04	0.03	-.02	-.04	-.07	-.09	-.07	-.02	0.05	-.06	-.02	-.09	-.07	0.0	0.19	0.06	0.11
FOB	0.10	0.04	-.06	-.25	-.22	-.13	-.01	0.04	0.13	0.08	-.10	-.07	-.14	-.17	-.08	-.02	0.02	-.05
FYG	0.11	0.07	0.03	0.14	-.12	-.05	-.12	-.08	-.17	0.02	0.15	0.09	0.02	-.01	0.12	0.10	0.03	0.16
FOG	0.09	0.11	0.11	-.11	-.16	-.02	-.14	0.06	-.02	0.15	0.19	0.10	-.03	0.01	0.06	0.10	0.13	0.16
SYB	-.09	-.12	0.0	-.05	-.07	-.01	0.01	0.23	0.0	0.01	0.04	-.02	-.08	-.04	-.12	0.15	0.10	0.08
SOB	0.10	-.03	0.05	0.04	0.12	0.0	-.11	0.02	-.01	0.05	0.09	-.02	-.03	0.05	0.26	-.04	0.07	0.14
SYG	0.14	0.06	0.02	-.01	-.17	-.26	-.10	-.02	0.15	0.19	0.02	0.14	0.15	0.03	-.05	0.03	0.04	0.11
SOG	0.11	-.05	-.03	0.07	-.03	-.15	-.14	0.0	-.01	0.11	0.07	-.03	-.09	0.04	-.08	0.15	0.06	0.18

UNIPOLAR SCALE NO. 42

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	P-W (11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.20	0.35	0.19	0.01	-.02	-.13	-.34	-.15	0.0	0.25	0.71	0.35	0.19	0.06	0.13	0.13	0.07	0.05
FOB	0.08	0.34	0.21	0.15	0.08	-.12	-.36	-.08	-.13	0.23	0.72	0.39	0.28	0.15	0.08	0.20	0.07	0.08
FYG	0.24	0.30	0.12	0.04	0.01	0.09	-.31	-.09	-.09	0.07	0.72	0.26	0.19	0.02	0.18	0.22	0.10	0.07
FOG	0.18	0.29	0.22	0.09	-.08	-.32	-.30	-.19	0.12	0.30	0.68	0.32	0.27	0.08	0.24	0.14	0.14	0.0
SYB	0.26	0.22	0.11	-.11	-.04	-.30	-.28	0.0	-.01	0.38	0.74	0.28	0.08	0.05	0.09	0.18	0.03	0.10
SOB	0.30	0.32	0.17	0.10	0.16	-.10	-.26	-.07	-.16	0.26	0.73	0.32	0.33	0.19	0.20	0.09	0.08	0.03
SYG	0.29	0.24	0.12	0.16	0.12	-.06	-.35	-.07	-.10	0.30	0.73	0.31	0.26	0.23	0.18	0.23	0.08	0.15
SOG	0.10	0.19	0.13	0.14	0.09	0.01	-.13	-.03	-.16	0.12	0.74	0.24	0.22	0.06	0.23	-.03	-.01	-.04

UNIPOLAR SCALE NO. 43

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	P-W (12)	(17)	(18)
FYB	0.48	0.49	0.30	0.10	0.08	-.16	-.53	-.34	-.15	0.31	0.07	0.15	0.07	-.06	-.09	0.62	0.35	0.26
FOB	0.52	0.45	0.14	-.08	-.03	-.07	-.45	-.19	-.15	0.28	0.15	0.12	0.06	-.10	-.08	0.66	0.42	0.35
FYG	0.57	0.55	0.39	0.19	0.17	-.18	-.57	-.45	-.16	0.35	0.18	0.17	0.15	-.12	0.13	0.71	0.29	0.41
FOG	0.64	0.48	0.20	0.05	0.14	-.25	-.58	-.41	-.23	0.39	0.14	0.16	-.02	-.06	-.04	0.67	0.31	0.42
SYB	0.41	0.33	0.24	0.15	0.21	-.04	-.38	-.19	-.24	0.18	-.01	0.21	0.12	0.06	-.09	0.63	0.22	0.29
SOB	0.42	0.24	0.11	-.13	0.05	-.12	-.23	-.07	-.03	0.20	0.04	0.14	-.16	-.22	-.01	0.58	0.34	0.26
SYG	0.61	0.39	0.03	-.01	0.0	-.17	-.39	-.31	-.18	0.27	0.14	-.01	0.14	-.13	0.04	0.63	0.36	0.03
SOG	0.58	0.31	0.21	0.03	0.02	-.14	-.50	-.22	-.15	0.15	-.07	-.12	-.01	-.10	-.08	0.69	0.21	0.35

UNIPOLAR SCALE NO. 44 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.08	0.07	0.11	0.07	0.05	0.05	-.06	-.09	-.08	0.04	0.03	-.14	-.09	0.05	-.09	-.15	-.04	0.05
FOB	0.01	0.01	0.07	0.01	0.0	0.04	-.04	-.06	-.06	0.03	0.07	0.10	0.03	-.14	0.05	0.0	0.03	-.05
FYG	0.11	0.06	0.08	0.02	0.03	0.01	-.14	-.09	0.06	0.11	0.20	0.14	0.12	-.10	0.04	0.06	0.12	0.02
FOG	0.07	0.02	0.0	0.12	0.05	-.01	-.09	-.07	0.06	0.05	0.25	-.03	-.03	0.0	0.17	0.0	0.16	-.08
SYB	-.03	-.06	0.03	0.04	0.04	0.04	0.02	-.07	0.06	-.01	0.13	0.09	-.06	0.03	-.06	-.04	0.03	0.0
SOB	0.11	0.10	0.09	0.05	0.06	0.0	-.10	-.08	-.12	0.06	0.16	0.16	0.21	-.03	0.08	-.06	0.11	0.05
SYG	0.05	-.05	0.05	-.02	-.16	-.05	0.01	0.06	0.14	0.10	0.09	0.15	0.08	0.05	0.06	-.02	0.27	0.04
SOG	0.0	-.05	0.09	0.06	0.08	0.18	0.04	0.06	-.13	-.15	0.22	0.09	0.12	-.06	-.11	-.11	-.18	-.07

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 45

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.22	0.19	0.12	0.03	0.05	-.11	-.12	-.10	-.17	0.14	-.08	0.21	0.02	-.03	-.17	0.23	0.07	0.16
FOB	0.24	0.26	0.17	0.10	0.02	-.03	-.19	-.23	-.15	0.22	-.02	0.20	-.01	0.02	-.07	0.32	0.09	0.17
FYG	0.30	0.17	0.24	0.23	-.07	-.19	-.22	-.07	-.11	0.19	0.05	0.12	0.05	0.05	0.05	0.31	0.17	0.20
FOG	0.23	0.17	0.09	0.13	0.12	-.11	-.11	-.13	-.07	0.29	0.07	0.28	0.16	0.08	-.12	0.43	0.04	0.23
SYB	0.16	0.13	0.20	0.13	0.20	0.10	-.11	-.10	-.35	0.02	0.0	0.27	0.07	-.07	0.02	0.36	0.01	0.08
SOB	0.03	0.13	0.21	0.20	0.11	0.05	-.16	-.12	-.26	0.17	0.06	0.33	-.02	0.07	0.03	0.28	-.06	0.06
SYG	0.20	0.24	0.11	0.18	0.18	0.10	-.19	-.25	-.29	0.27	0.01	0.27	0.12	-.02	0.08	0.43	0.15	0.20
SOG	0.12	0.19	0.17	0.08	-.03	0.03	-.20	-.18	-.18	0.17	-.02	0.33	0.02	-.09	0.04	0.16	0.04	0.23

UNIPOLAR SCALE NO. 46

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.32	0.27	0.27	-.01	-.11	-.39	-.37	-.23	-.03	0.39	-.03	0.23	0.05	-.05	-.06	0.31	0.21	0.22
FOB	0.28	0.11	0.22	0.09	0.07	-.23	-.29	-.12	-.10	0.13	0.04	0.12	0.07	-.09	0.05	0.26	0.22	0.28
FYG	0.33	0.28	0.23	0.22	-.26	-.48	-.36	-.20	0.17	0.36	0.03	0.28	0.12	-.02	0.04	0.25	0.32	0.32
FOG	0.34	0.34	0.30	0.23	0.13	-.47	-.39	-.21	-.17	0.42	0.05	0.39	0.24	0.13	0.08	0.39	0.23	0.37
SYB	0.20	0.26	0.17	0.08	-.10	-.40	-.28	0.15	0.03	0.24	0.08	0.09	0.28	0.02	-.12	0.32	0.10	0.31
SOB	0.22	0.09	0.14	0.03	-.02	-.47	-.28	-.08	0.08	0.28	0.07	0.11	0.05	-.02	-.02	0.21	-.04	0.30
SYG	0.40	0.37	0.11	-.10	-.12	-.35	-.40	-.10	0.04	0.39	0.09	-.01	0.12	0.0	0.0	0.36	0.30	0.27
SOG	0.35	0.19	0.09	-.01	-.16	-.47	-.36	-.03	-.06	0.39	0.02	-.03	0.02	-.10	0.0	0.39	0.31	0.33

UNIPOLAR SCALE NO. 47

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.16	0.17	0.15	-.01	-.06	-.20	-.24	-.06	0.01	0.26	0.08	0.36	0.0	-.07	-.03	0.26	0.22	-.02
FOB	0.16	0.16	0.37	0.18	-.08	-.22	-.24	0.0	-.04	0.22	0.24	0.53	0.17	0.13	0.02	0.21	0.07	-.01
FYG	0.16	0.15	0.13	0.12	-.08	-.09	-.16	0.05	-.08	0.20	0.09	0.32	0.12	0.24	0.22	0.28	0.05	0.12
FOG	0.26	0.32	0.35	0.35	0.18	-.29	-.29	-.23	0.02	0.35	0.17	0.50	0.23	0.16	0.08	0.50	0.05	0.20
SYB	0.09	0.13	0.08	-.09	0.0	-.17	-.17	0.06	0.03	0.11	0.20	0.22	-.02	-.01	0.12	0.10	0.08	0.06
SOB	0.16	0.23	0.13	0.0	0.06	-.15	-.16	-.11	-.04	0.12	0.02	0.07	-.07	-.01	0.05	0.08	0.15	-.09
SYG	0.24	0.26	0.14	0.04	-.14	-.25	-.23	-.11	-.05	0.27	0.13	0.04	0.22	0.15	0.14	0.25	0.06	-.07
SOG	0.16	0.15	-.09	-.16	-.17	-.07	-.13	-.04	0.04	0.14	-.09	-.10	-.02	-.12	-.10	0.18	0.17	0.22

UNIPOLAR SCALE NO. 48

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	P-W (11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.08	-.05	-.08	-.13	-.18	0.06	0.04	0.12	0.06	-.05	0.32	-.01	0.02	0.03	0.11	-.06	-.08	0.11
FOB	-.16	-.14	-.13	-.13	-.08	0.0	0.18	0.21	0.15	-.08	0.13	-.04	-.06	-.01	-.08	-.15	-.18	-.13
FYG	-.04	0.0	-.04	0.04	0.06	0.17	-.02	0.07	-.12	-.14	0.29	0.03	-.01	0.18	0.12	-.06	-.17	-.17
FOG	-.04	0.11	-.11	0.0	0.05	-.03	0.05	0.05	0.10	0.01	0.16	0.04	0.06	0.03	0.11	-.03	0.10	-.12
SYB	0.01	-.08	-.05	-.01	0.04	0.05	0.02	0.05	0.0	0.0	0.12	-.06	0.12	-.05	0.05	-.12	-.16	-.10
SOB	0.01	0.12	-.02	0.06	0.16	0.05	0.07	0.04	-.09	-.07	0.27	0.07	0.15	0.15	-.01	0.0	-.05	-.07
SYG	-.01	0.0	-.14	-.10	0.02	0.03	0.11	0.11	-.13	-.17	0.22	-.17	0.01	-.01	0.0	-.15	-.07	-.11
SOG	-.21	-.23	0.01	0.10	0.07	0.10	0.17	0.06	-.04	-.09	0.10	0.21	0.11	0.16	0.04	-.01	-.06	-.05

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 49

															P-W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.02	-.04	-.19	0.02	0.10	0.12	0.07	0.0	-.01	-.11	-.07	-.11	-.10	-.13	-.06	0.30	0.12	0.08
FOB	0.12	-.02	0.05	0.07	0.14	0.29	-.01	0.10	-.11	-.08	0.01	0.11	-.07	0.01	-.09	0.37	0.21	0.13
FYG	0.10	0.06	0.09	0.16	-.03	0.11	-.09	0.03	0.04	-.01	0.03	0.14	-.10	-.01	0.07	0.31	0.17	0.14
FOG	0.05	-.11	-.03	-.05	-.07	0.11	0.09	0.05	0.18	-.01	0.0	0.05	0.01	0.08	-.16	0.23	0.04	0.08
SYB	0.11	0.01	-.04	-.01	0.20	0.16	-.04	0.01	-.16	-.03	-.01	-.07	-.03	-.10	-.15	0.45	0.16	-.02
SOB	0.01	0.08	-.05	-.02	0.13	0.20	0.06	0.02	-.07	-.12	-.13	0.02	-.04	-.04	0.10	0.33	0.02	0.04
SYG	0.11	0.05	-.05	0.05	0.25	0.33	0.0	-.10	-.19	-.11	-.07	0.04	0.0	-.04	-.15	0.48	0.11	0.01
SOG	0.08	0.07	-.01	-.01	0.24	0.24	0.02	-.03	-.19	-.10	0.03	-.04	-.05	-.07	-.05	0.43	0.14	-.03

UNIPOLAR SCALE NO. 50

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.42	0.48	0.20	0.05	0.08	-.01	-.44	-.28	-.21	0.20	0.27	0.14	0.14	-.02	-.06	0.41	0.24	0.20
FOB	0.39	0.56	0.17	0.02	-.08	-.19	-.47	-.19	-.05	0.39	0.31	0.27	0.16	0.16	0.08	0.46	0.29	0.27
FYG	0.39	0.49	0.16	-.05	-.02	-.15	-.44	-.23	0.04	0.23	0.28	0.01	0.12	-.15	0.04	0.42	0.31	0.20
FOG	0.56	0.61	0.14	0.0	0.09	-.11	-.52	-.44	-.17	0.33	0.22	0.04	0.09	-.08	0.02	0.45	0.24	0.16
SYB	0.34	0.39	0.34	-.07	0.03	-.10	-.42	-.13	-.05	0.26	0.12	0.21	0.09	0.03	-.05	0.36	0.25	0.22
SOB	0.41	0.37	0.17	-.02	0.06	-.12	-.39	-.24	0.0	0.26	0.12	0.20	-.16	-.02	-.05	0.23	0.20	0.10
SYG	0.35	0.34	0.12	0.09	0.05	-.11	-.25	-.16	-.12	0.22	0.33	0.17	0.13	-.02	0.12	0.27	0.10	0.13
SOG	0.49	0.46	0.21	0.03	-.05	0.01	-.44	-.28	-.06	0.28	0.04	-.25	0.0	-.20	0.0	0.32	0.24	0.16

UNIPOLAR SCALE NO. 56 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.13	0.05	-.06	-.20	-.04	-.03	-.02	0.0	0.10	0.12	-.08	-.17	0.06	-.14	-.01	0.08	0.18	-.06
FOB	-.04	-.08	-.15	-.16	-.08	-.04	0.13	0.06	0.14	-.14	0.03	-.03	-.06	-.21	-.18	0.13	0.16	0.11
FYG	0.10	-.05	-.10	-.05	-.03	-.01	0.06	0.02	0.11	-.07	0.08	-.05	-.04	-.04	-.02	0.03	0.09	0.05
FOG	-.04	-.22	-.30	-.13	0.08	0.16	0.29	0.27	-.12	-.25	0.0	-.12	-.02	-.01	-.01	-.13	0.15	-.10
SYB	-.14	-.20	-.06	0.0	0.10	0.07	0.22	0.03	-.09	-.16	-.04	-.13	-.04	-.12	-.01	0.04	-.06	-.11
SOB	-.20	-.27	-.22	-.03	-.13	0.07	0.16	0.23	0.12	-.02	0.06	0.04	0.09	-.07	0.01	-.02	0.04	-.06
SYG	-.10	-.08	-.22	-.17	-.16	-.03	0.14	0.26	0.10	-.12	0.09	-.04	0.04	0.08	0.0	0.09	0.05	-.13
SOG	-.06	-.16	-.10	-.04	-.04	0.02	0.12	0.09	0.0	-.02	0.04	-.08	-.05	-.05	-.09	0.03	0.01	0.15

UNIPOLAR SCALE NO. 57

												P-W						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.10	0.11	0.20	0.13	-.03	-.27	-.18	-.07	-.02	0.21	0.10	0.66	0.18	0.25	-.01	0.19	0.11	0.15
FOB	0.05	0.29	0.42	0.30	0.12	-.12	-.28	-.11	-.24	0.13	0.27	0.70	0.34	0.30	0.10	0.18	0.05	0.14
FYG	0.05	0.14	0.26	0.23	-.18	-.16	-.22	-.13	0.08	0.16	0.16	0.63	0.18	0.33	0.01	0.17	0.15	0.19
FOG	0.02	0.22	0.30	0.30	-.09	-.28	-.18	-.05	0.01	0.32	0.35	0.75	0.35	0.38	0.16	0.24	0.14	0.15
SYB	-.02	-.03	0.19	0.14	0.11	0.11	-.06	-.03	-.03	-.01	0.09	0.66	0.17	0.22	0.06	0.06	0.07	0.16
SOB	0.15	0.20	0.20	0.13	-.05	-.16	-.17	-.19	0.06	0.17	0.14	0.60	0.03	0.13	0.03	-.01	0.10	0.06
SYG	-.05	-.05	0.12	0.20	0.0	0.01	-.15	-.09	-.05	0.11	-.06	0.59	0.14	0.06	0.03	0.15	0.12	0.15
SOG	0.04	0.06	0.13	0.24	-.08	0.05	-.05	-.08	-.10	0.07	0.10	0.60	0.10	0.12	0.16	0.0	0.04	0.03

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 58

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	P-W (13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.0	0.15	0.07	0.05	0.08	-.15	-.07	-.02	-.06	0.14	0.26	0.48	0.23	0.03	0.04	0.18	0.07	0.01
FOB	-.10	0.30	0.34	0.27	0.08	-.25	-.16	-.01	-.09	0.21	0.32	0.76	0.36	0.33	0.08	0.11	-.12	-.15
FYG	0.05	0.07	0.18	0.22	-.18	-.09	-.15	-.05	-.04	0.09	0.14	0.45	0.14	0.24	0.17	0.25	0.10	0.13
FOG	0.13	0.21	0.32	0.36	0.03	-.39	-.21	-.10	-.06	0.29	0.16	0.65	0.34	0.21	0.08	0.36	0.14	0.10
SYB	0.09	0.15	0.08	-.07	-.03	-.21	-.17	0.07	-.09	0.20	0.37	0.26	0.14	0.17	0.22	0.04	0.0	0.01
SOB	-.09	0.02	0.01	-.02	0.10	-.09	0.05	0.12	-.10	-.07	0.26	0.36	0.06	0.25	0.04	0.05	0.04	0.11
SYG	-.08	-.06	-.05	0.10	0.13	-.11	-.03	0.10	-.06	0.01	0.23	0.38	0.29	0.38	0.13	-.04	-.11	-.21
SOG	-.13	-.07	0.04	0.12	0.10	-.03	0.06	0.02	-.01	0.07	0.16	0.35	-.01	0.15	0.07	-.13	-.05	-.04

UNIPOLAR SCALE NO. 59

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.08	0.15	0.06	0.05	0.10	0.05	-.05	-.08	-.15	0.09	0.06	0.36	0.07	0.04	-.16	0.25	0.10	0.0
FOB	0.05	0.11	0.25	0.12	0.0	-.22	-.15	0.01	-.04	0.14	0.26	0.49	0.23	0.12	0.03	0.20	0.17	-.03
FYG	0.19	0.22	0.19	0.13	-.11	-.21	-.16	-.08	0.01	0.20	0.03	0.33	0.06	0.13	0.05	0.23	0.09	0.21
FOG	0.18	0.21	0.41	0.44	0.06	-.37	-.24	-.19	-.08	0.34	0.0	0.47	0.20	0.10	0.13	0.33	0.12	0.20
SYB	-.02	0.05	0.12	0.0	0.0	-.04	-.05	0.08	0.03	0.03	0.11	0.19	0.20	0.04	-.05	0.14	0.01	0.10
SOB	0.09	0.15	0.11	0.11	0.16	0.05	-.19	-.05	-.17	0.10	0.24	0.25	-.01	0.04	0.11	0.08	0.09	0.06
SYG	0.19	0.14	0.16	0.15	0.10	0.06	-.18	-.08	-.08	0.20	0.17	0.24	0.07	0.11	0.07	0.24	0.12	-.01
SOG	0.06	0.05	-.04	0.06	0.0	-.02	-.09	0.03	-.05	-.12	-.05	0.03	-.03	0.02	0.06	0.13	-.08	0.21

UNIPOLAR SCALE NO. 60

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	P-W (13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.09	0.16	0.08	0.05	-.10	-.15	-.17	-.04	-.03	0.22	0.28	0.71	0.07	0.21	0.11	0.27	0.02	0.17
FOB	0.05	0.28	0.37	0.25	0.03	-.26	-.25	-.18	-.12	0.29	0.31	0.77	0.19	0.34	0.06	0.27	0.07	0.04
FYG	0.02	0.14	0.20	0.27	-.20	-.07	-.14	0.04	0.0	0.04	0.15	0.64	0.17	0.29	-.07	0.25	0.16	0.15
FOG	0.11	0.35	0.48	0.34	-.10	-.38	-.36	-.25	-.01	0.38	0.26	0.77	0.34	0.16	0.10	0.44	0.23	0.11
SYB	-.02	-.03	0.15	-.05	-.14	0.10	-.06	0.08	-.08	0.08	0.16	0.58	-.09	0.02	0.01	0.06	0.16	0.05
SOB	0.13	0.19	0.22	0.10	0.08	0.02	-.12	-.20	-.09	0.21	0.25	0.56	-.03	0.10	0.13	0.28	-.08	0.06
SYG	0.04	0.11	0.23	0.14	0.0	0.08	-.24	-.01	-.06	0.21	0.25	0.56	-.01	0.14	0.16	0.17	0.20	0.04
SOG	-.07	0.10	0.11	0.19	0.14	0.07	0.04	-.10	-.19	0.03	0.27	0.62	0.16	0.24	0.29	0.07	-.13	-.13

UNIPOLAR SCALE NO. 61

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	P-W (13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.10	0.09	0.15	0.20	0.01	0.02	-.06	-.04	-.17	0.05	0.13	0.73	0.09	0.36	0.09	0.06	-.03	-.04
FOB	-.09	0.18	0.40	0.42	0.21	0.0	-.18	0.0	-.21	0.08	0.33	0.71	0.47	0.49	0.26	0.05	-.12	-.01
FYG	-.17	0.04	0.21	0.33	-.02	0.08	-.09	0.01	-.07	-.03	0.21	0.71	0.12	0.39	0.17	-.01	-.11	0.0
FOG	-.06	0.15	0.19	0.37	-.07	-.26	-.09	-.06	0.06	0.33	0.33	0.71	0.28	0.29	0.27	0.06	0.13	-.02
SYB	0.01	-.04	0.18	0.23	0.08	0.12	0.0	-.16	-.04	-.06	0.15	0.73	0.23	0.21	0.31	-.07	-.06	-.02
SOB	-.06	0.12	0.16	0.18	-.02	0.03	0.03	-.08	-.05	0.13	0.15	0.66	0.17	0.22	0.19	-.04	-.11	-.09
SYG	0.01	0.06	0.16	0.34	0.06	0.15	-.04	-.14	-.12	0.06	0.10	0.61	0.11	0.19	0.24	-.01	-.16	-.10
SOG	-.14	0.01	0.24	0.29	-.01	0.13	0.10	-.02	0.0	0.0	0.24	0.76	0.22	0.38	0.31	-.19	-.23	-.28

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 62

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.36	0.47	0.38	0.02	-.04	-.21	-.53	-.34	-.06	0.36	0.20	0.28	0.07	0.03	-.01	0.19	0.25	0.25
FOB	0.21	0.40	0.35	0.17	-.01	-.12	-.44	-.26	-.09	0.22	0.21	0.40	0.11	0.23	0.12	0.32	0.22	0.24
FYG	0.31	0.49	0.34	0.18	-.12	-.15	-.54	-.39	-.05	0.21	0.24	0.31	0.13	-.02	0.16	0.33	0.20	0.34
FOG	0.34	0.55	0.47	0.23	0.14	-.28	-.58	-.48	-.10	0.37	0.21	0.39	0.16	0.04	-.01	0.38	0.23	0.28
SYB	0.31	0.31	0.27	-.08	-.06	-.24	-.37	-.18	-.08	0.31	0.20	0.34	0.05	-.10	-.01	0.39	0.29	0.31
SOB	0.22	0.40	0.29	0.13	0.17	-.23	-.31	-.28	-.19	0.29	0.22	0.28	-.01	-.16	0.05	0.28	0.20	0.26
SYG	0.29	0.40	0.25	0.22	-.01	-.12	-.46	-.26	-.10	0.24	0.22	0.22	0.0	-.10	0.13	0.26	0.19	0.28
SOG	0.23	0.40	0.32	0.17	-.01	-.10	-.43	-.20	-.15	0.18	-.02	0.13	-.08	-.04	0.16	0.33	0.13	0.31

UNIPOLAR SCALE NO. 63

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.17	0.07	0.11	0.07	-.12	-.31	-.22	0.02	0.03	0.15	0.08	0.15	0.02	0.10	-.01	0.26	0.0	0.11
FOB	0.15	0.14	0.21	0.12	0.02	-.17	-.24	0.0	0.03	0.08	0.21	0.38	0.15	0.16	0.04	0.22	0.04	0.13
FYG	0.09	0.06	0.17	0.17	-.12	0.05	-.11	0.02	-.12	0.06	0.01	0.26	0.08	0.22	0.08	0.18	-.17	0.09
FOG	0.08	0.15	0.05	0.0	-.08	-.02	-.15	-.06	0.12	0.05	0.32	0.15	0.22	0.15	0.07	0.14	0.01	0.11
SYB	0.25	0.27	0.13	0.10	0.14	-.17	-.28	-.03	-.20	0.19	0.27	0.11	0.14	0.03	0.03	0.28	0.07	0.22
SOB	0.19	0.26	0.16	0.18	0.17	-.07	-.19	0.03	-.22	0.11	0.34	0.18	0.18	0.25	-.01	0.23	-.06	0.04
SYG	0.17	0.33	0.24	0.15	0.01	-.07	-.26	-.18	-.10	0.19	0.25	0.09	0.13	0.19	0.07	0.14	-.02	-.01
SOG	0.10	0.06	-.02	-.02	-.04	-.20	-.09	0.16	-.01	0.22	0.18	0.05	0.24	0.17	-.02	0.16	0.11	0.01

UNIPOLAR SCALE NO. 64 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.13	-.09	-.06	-.33	-.23	-.25	-.12	0.16	0.32	0.21	0.02	0.02	0.08	-.10	-.07	-.03	0.16	-.09
FOB	-.06	-.02	0.01	0.03	-.04	0.02	0.02	-.02	-.08	0.03	0.06	0.04	-.06	-.01	0.14	0.03	0.07	-.11
FYG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SYB	0.01	0.0	0.02	-.16	-.05	-.07	-.03	0.02	0.11	0.04	0.0	0.0	0.07	-.01	-.06	-.05	0.07	0.08
SOB	0.15	0.10	-.04	-.09	-.13	-.11	-.04	0.13	0.13	0.11	0.12	0.03	0.04	0.08	0.07	0.03	-.03	0.11
SYG	0.02	0.10	-.01	-.26	-.26	-.17	-.14	0.19	0.15	0.15	-.01	0.03	0.04	0.07	0.11	0.06	0.11	-.08
SOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

UNIPOLAR SCALE NO. 65

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.09	0.11	-.03	-.16	-.14	-.19	-.18	0.04	0.15	0.22	0.09	-.03	-.02	-.23	-.06	0.13	0.12	0.05
FOB	0.16	-.04	0.02	-.09	-.21	-.15	-.11	0.11	0.24	0.13	-.05	0.05	0.0	-.04	0.02	0.13	0.20	0.06
FYG	0.15	0.16	0.05	0.08	-.37	-.33	-.18	0.10	0.26	0.26	0.07	0.30	0.09	0.12	0.0	0.23	0.23	0.29
FOG	0.10	0.18	0.21	0.09	-.18	-.26	-.18	-.05	0.27	0.22	-.04	0.20	0.03	-.02	0.03	0.31	0.18	0.21
SYB	0.19	0.14	0.09	-.26	-.22	-.16	-.19	0.13	0.17	0.33	-.04	-.01	0.02	-.10	-.04	0.23	0.20	0.21
SOB	0.22	0.05	-.12	-.30	-.17	-.21	0.02	0.03	0.23	0.23	0.02	0.01	-.09	-.04	0.01	0.02	0.0	0.15
SYG	0.03	-.02	-.05	-.23	-.36	-.27	-.07	0.23	0.44	0.20	0.10	-.03	0.01	0.0	0.02	0.08	0.19	0.14
SOG	0.20	0.10	0.08	-.21	-.27	-.22	-.25	0.14	0.22	0.34	-.16	-.06	0.04	-.14	0.0	0.34	0.18	0.26

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 66

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.18	0.02	0.12	-.10	-.17	-.23	-.18	0.06	0.19	0.26	0.10	0.21	0.09	0.0	-.12	0.21	0.19	0.20
FOB	0.17	0.13	0.19	0.01	-.14	-.39	-.17	-.01	0.24	0.36	0.01	0.23	0.06	0.01	-.10	0.19	0.19	0.24
FYG	0.38	0.24	0.12	0.05	-.32	-.40	-.29	-.09	0.29	0.39	0.04	0.14	0.08	0.02	0.06	0.37	0.27	0.38
FOG	0.17	0.08	0.26	0.16	-.18	-.43	-.23	0.0	0.17	0.37	0.06	0.46	0.25	0.04	-.08	0.34	0.16	0.31
SYB	0.15	0.22	0.21	-.15	-.28	-.40	-.33	0.13	0.23	0.37	0.18	0.11	0.17	0.15	0.10	0.13	0.14	0.21
SOB	0.14	0.08	0.27	0.07	0.04	-.32	-.22	-.16	0.11	0.27	0.07	0.21	0.02	-.05	0.09	0.11	0.05	0.31
SYG	-.02	-.04	0.09	-.06	-.30	-.36	-.11	0.23	0.37	0.31	0.08	0.18	0.19	0.27	-.05	0.13	0.01	0.25
SOG	0.17	0.21	0.01	-.08	-.24	-.39	-.19	0.07	0.09	0.28	-.02	0.03	0.03	-.02	0.14	0.16	0.01	0.25

UNIPOLAR SCALE NO. 67 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.13	-.09	-.06	-.33	-.23	-.25	-.12	0.16	0.32	0.21	0.02	0.02	0.08	-.10	-.07	-.03	0.16	-.09
FOB	-.13	-.22	-.18	-.17	-.13	-.07	0.13	0.20	0.15	-.06	0.0	-.08	-.06	-.01	0.14	-.03	0.07	-.02
FYG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FOG	0.08	0.08	-.02	0.0	0.04	0.12	0.01	-.02	0.10	0.06	0.17	0.15	0.15	0.07	-.07	0.0	-.08	-.08
SYB	-.07	0.0	-.07	-.07	-.14	-.07	-.03	0.02	0.03	0.04	0.11	-.05	-.05	-.10	0.03	-.12	0.07	0.0
SOB	0.04	-.02	0.01	-.05	-.17	-.11	-.07	0.03	0.25	0.13	-.07	-.09	-.08	-.11	-.08	-.08	0.01	0.10
SYG	0.13	0.12	-.01	-.16	-.10	-.24	-.09	0.14	0.21	0.26	0.17	-.09	0.18	0.02	0.09	0.06	0.19	0.06
SOG	0.10	0.11	0.12	0.13	-.16	-.25	-.20	-.03	0.14	0.16	-.10	-.06	-.08	-.02	-.08	0.08	0.10	0.10

UNIPOLAR SCALE NO. 68

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.25	0.08	0.03	-.35	-.36	-.42	-.26	0.01	0.35	0.40	-.07	-.02	-.08	-.13	-.11	0.10	0.19	0.22
FOB	0.23	0.04	0.07	-.06	-.42	-.22	-.18	0.01	0.32	0.21	0.0	-.03	-.03	0.0	-.01	0.05	0.07	-.08
FYG	0.22	0.15	0.03	-.14	-.12	-.26	-.25	-.08	0.19	0.30	0.12	0.10	0.0	-.06	-.03	0.14	0.12	0.24
FOG	0.08	-.01	0.03	0.19	-.06	-.16	-.07	0.13	0.11	0.13	0.13	0.15	0.06	0.11	0.01	0.13	0.06	0.15
SYB	0.15	0.17	0.10	-.16	-.11	-.31	-.21	0.12	0.16	0.32	0.21	0.08	0.19	0.09	0.02	0.23	-.01	0.25
SOB	0.07	0.07	0.05	-.08	-.12	-.44	-.13	0.03	0.23	0.34	0.05	0.06	0.07	-.11	0.02	0.09	0.04	0.23
SYG	0.12	0.02	0.07	-.24	-.42	-.52	-.26	0.27	0.42	0.34	0.13	0.06	0.21	-.02	-.05	0.15	0.09	0.13
SOG	0.20	0.09	-.11	-.16	-.22	-.28	-.13	0.16	0.22	0.30	-.02	-.07	0.09	-.09	-.09	0.18	0.03	0.32

UNIPOLAR SCALE NO. 69

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.02	0.09	0.10	0.04	-.04	-.08	-.03	0.11	0.11	0.13	0.02	0.09	-.04	-.10	-.07	0.11	0.07	0.07
FOB	0.02	0.16	-.03	0.05	0.07	-.05	-.09	-.13	0.02	-.04	0.17	0.18	0.03	0.12	-.04	0.05	0.09	0.13
FYG	0.08	0.23	-.08	-.23	-.24	-.13	-.14	0.05	0.41	0.23	0.15	0.13	0.13	0.04	0.03	0.08	0.19	0.02
FOG	-.06	-.02	0.23	0.0	0.04	-.07	-.03	-.12	-.07	-.04	0.11	0.21	0.04	0.07	-.07	0.10	0.12	-.08
SYB	-.02	0.04	-.02	-.06	-.19	-.10	-.07	-.05	0.07	0.09	0.11	-.10	-.06	-.13	0.04	-.14	0.01	-.04
SOB	0.01	-.01	0.01	-.07	-.04	-.06	-.03	0.02	0.10	0.13	0.14	-.02	-.06	-.02	0.05	0.03	0.07	0.07
SYG	0.07	0.04	0.07	0.03	-.03	-.18	-.10	0.0	0.11	0.17	0.17	0.02	0.09	0.10	0.20	0.02	0.04	0.01
SOG	0.06	0.08	0.10	0.02	-.12	-.15	-.03	0.08	0.16	0.22	0.18	0.05	0.13	0.09	0.17	-.10	0.01	-.08

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 70

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.28	0.23	0.18	-.09	-.23	-.40	-.32	-.10	0.08	0.40	-.05	0.13	0.01	-.20	-.27	0.31	0.25	0.30
FOB	0.19	0.11	0.06	0.0	-.11	-.36	-.17	-.11	0.09	0.18	-.07	-.01	-.06	-.27	-.13	0.20	0.19	0.23
FYG	0.48	0.26	0.30	0.19	-.21	-.47	-.33	-.13	0.19	0.44	-.01	0.09	0.03	-.17	0.02	0.41	0.32	0.41
FOG	0.31	0.33	0.23	0.11	0.13	-.37	-.36	-.24	-.06	0.39	0.10	0.23	0.11	-.07	-.13	0.38	0.04	0.35
SYB	0.13	0.24	0.15	-.07	-.24	-.34	-.27	0.11	0.22	0.31	0.09	0.11	0.16	-.03	0.04	0.27	0.10	0.26
SOB	0.14	0.05	0.05	-.17	-.19	-.30	-.19	0.0	0.29	0.31	0.04	0.10	0.06	-.21	-.05	0.16	0.05	0.17
SYG	0.24	0.19	0.25	-.04	-.29	-.47	-.41	-.07	0.28	0.52	0.04	0.08	0.05	0.0	-.06	0.26	0.17	0.36
SOG	0.32	0.19	0.04	-.14	-.32	-.43	-.35	0.07	0.16	0.43	-.12	0.05	-.06	-.19	0.05	0.35	0.15	0.55

UNIPOLAR SCALE NO. 71 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.10	0.03	-.04	-.21	-.22	-.13	-.07	0.15	0.26	0.15	0.14	-.05	-.07	-.02	-.08	0.05	0.08	0.02
FOB	0.02	0.05	-.12	-.24	-.12	-.09	-.05	0.01	0.09	0.12	-.06	-.10	0.0	-.01	-.02	0.0	0.03	0.03
FYG	0.04	0.0	0.03	0.12	-.21	-.12	-.01	0.08	0.22	0.08	-.01	-.03	0.07	0.10	0.03	0.11	-.09	0.02
FOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SYB	0.07	0.08	-.02	-.28	-.24	-.24	-.16	0.13	0.17	0.26	0.13	-.07	-.08	-.03	-.07	-.02	0.17	0.0
SOB	0.13	0.07	0.02	-.09	-.09	-.16	-.09	-.03	0.21	0.16	0.07	0.04	-.06	-.04	0.09	-.06	0.04	0.14
SYG	0.03	0.0	-.01	-.10	-.15	0.02	-.09	0.15	0.19	0.13	0.10	0.02	0.05	-.03	0.16	-.06	0.15	0.13
SOG	0.01	0.0	0.01	0.01	-.16	-.16	0.01	0.11	0.08	0.16	0.18	0.03	0.13	0.07	0.13	-.10	0.01	-.08

UNIPOLAR SCALE NO. 72

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.21	0.11	-.07	-.35	-.36	-.35	-.25	0.06	0.42	0.37	0.04	-.06	-.06	-.15	-.13	0.18	0.29	0.23
FOB	0.14	0.07	-.11	-.44	-.37	-.32	-.14	0.01	0.45	0.32	0.07	-.15	-.18	-.14	-.10	0.07	0.27	0.0
FYG	0.28	0.24	0.02	-.14	-.27	-.35	-.28	-.11	0.39	0.38	0.07	-.05	0.03	-.01	0.06	0.20	0.32	0.22
FOG	0.20	0.14	0.09	-.07	-.16	-.18	-.14	-.01	0.12	0.24	0.05	0.10	0.04	-.09	-.07	0.20	0.11	0.29
SYB	0.17	0.13	-.01	-.46	-.25	-.38	-.19	0.16	0.40	0.41	0.16	-.17	-.07	-.11	-.02	0.13	0.28	0.07
SOB	0.16	-.02	0.03	-.25	-.24	-.26	-.13	-.01	0.33	0.28	-.13	0.05	-.14	-.12	0.06	0.02	0.07	0.09
SYG	0.03	-.01	0.0	-.16	-.48	-.41	-.14	0.20	0.50	0.31	-.05	-.02	0.05	0.0	-.05	0.11	0.17	0.11
SOG	0.22	0.14	0.08	-.28	-.44	-.34	-.25	0.03	0.45	0.39	-.11	-.17	0.06	-.18	0.01	0.17	0.25	0.21

UNIPOLAR SCALE NO. 73

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.28	0.14	0.01	-.40	-.32	-.30	-.22	-.01	0.32	0.38	-.02	-.07	-.03	-.16	-.12	0.13	0.41	0.20
FOB	0.15	0.03	0.04	-.41	-.27	-.36	-.19	0.15	0.31	0.31	0.08	0.0	0.11	-.07	0.02	0.14	0.22	0.06
FYG	0.23	0.23	-.01	-.25	-.15	-.26	-.21	-.09	0.27	0.25	0.20	0.11	-.05	-.06	0.02	0.07	0.33	0.18
FOG	0.08	0.20	0.10	-.13	-.19	-.27	-.16	0.0	0.06	0.27	0.10	0.15	0.12	0.04	0.0	0.01	0.18	0.17
SYB	0.10	0.14	0.11	-.50	-.23	-.20	-.20	0.15	0.20	0.25	0.07	-.01	-.06	-.21	-.08	0.10	0.23	0.04
SOB	0.14	0.07	-.02	-.34	-.19	-.14	-.10	0.04	0.16	0.25	0.05	0.10	-.06	0.01	0.07	0.13	0.14	0.15
SYG	0.15	0.16	0.06	-.18	-.17	-.19	-.20	0.18	0.12	0.23	0.15	0.07	0.13	0.08	-.06	0.26	0.14	-.01
SOG	0.25	0.10	0.08	-.28	-.25	-.16	-.18	0.05	0.18	0.28	-.15	-.11	0.01	-.13	0.02	0.31	0.22	0.20

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 74

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.03	0.10	0.09	0.04	-.13	-.10	-.04	0.09	0.10	0.17	0.22	0.12	0.05	-.03	0.04	0.12	0.0	0.13
FOB	0.06	0.03	-.04	-.09	0.0	-.03	0.0	0.04	0.07	-.02	0.11	0.0	-.13	-.01	0.01	0.03	-.05	0.04
FYG	0.09	0.08	0.06	0.02	-.22	-.07	-.11	0.04	0.13	0.09	0.09	0.06	0.01	0.08	-.08	0.19	-.09	0.11
FOG	0.13	0.13	0.01	0.05	0.18	0.15	-.02	-.08	-.10	0.02	0.18	0.10	0.20	0.12	-.02	0.03	-.03	-.14
SYB	-.01	-.01	0.03	0.0	-.05	0.02	0.0	0.01	0.0	0.07	0.15	0.08	-.09	-.05	0.17	0.0	0.0	-.06
SOB	0.13	0.04	-.04	-.05	0.03	0.03	-.07	0.11	0.04	-.02	0.18	0.10	0.09	0.20	-.07	0.09	0.03	0.10
SYG	0.21	0.26	0.08	0.03	-.03	-.20	-.19	-.04	-.14	0.25	0.26	0.09	0.08	0.21	0.02	0.20	0.02	-.13
SOG	0.0	0.0	0.06	0.17	-.07	-.09	-.04	0.04	0.0	0.04	0.12	-.11	0.14	0.02	0.02	-.09	0.02	-.06

UNIPOLAR SCALE NO. 75

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.25	-.22	-.26	-.05	0.08	0.18	0.30	0.19	0.08	-.14	0.08	0.01	0.03	0.01	0.03	-.17	-.09	-.24
FOB	-.07	-.02	-.14	-.05	0.03	0.07	0.10	0.03	0.05	0.0	0.0	0.01	0.0	0.14	-.08	0.0	-.03	-.03
FYG	0.24	0.29	0.02	-.01	0.11	-.06	-.12	-.25	-.05	0.17	0.05	-.06	-.02	-.01	0.08	0.04	0.18	-.10
FOG	-.08	-.13	-.21	0.0	0.12	0.04	0.19	0.03	-.07	-.05	0.01	0.02	0.06	-.07	-.11	-.01	-.11	-.11
SYB	-.31	-.28	-.34	-.08	-.06	0.17	0.32	0.24	0.11	-.24	-.14	-.13	-.08	-.04	-.15	-.18	-.16	-.11
SOB	0.02	-.04	0.04	0.12	0.18	0.13	0.09	-.20	-.13	-.24	-.02	0.02	0.01	0.05	-.02	-.03	0.05	-.17
SYG	-.07	-.08	-.14	-.12	-.19	-.08	0.16	0.04	0.02	0.03	-.08	0.0	0.07	0.03	-.06	0.0	0.01	0.03
SOG	-.18	-.12	-.04	-.01	-.07	-.05	0.24	0.13	-.06	0.01	0.04	0.12	-.02	-.08	-.05	0.0	-.04	-.01

UNIPOLAR SCALE NO. 76

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.13	0.09	0.19	0.01	-.02	0.01	-.09	-.15	0.14	0.16	-.09	-.01	0.08	-.05	-.16	0.0	0.10	0.01
FOB	-.02	0.10	0.0	0.08	-.04	0.09	-.02	-.09	-.04	0.06	0.0	-.02	0.06	-.04	-.04	-.02	-.06	0.07
FYG	0.24	0.25	0.02	0.02	-.05	-.12	-.19	-.20	0.02	0.19	0.14	0.05	0.19	-.10	-.02	0.22	0.32	0.17
FOG	0.19	0.12	0.05	0.15	0.05	-.23	-.08	-.08	0.10	0.29	0.20	0.17	0.16	-.08	-.10	0.14	0.13	0.10
SYB	0.17	0.19	0.13	0.08	0.16	0.22	-.10	-.35	0.01	0.02	-.16	-.12	-.12	0.04	0.13	-.07	0.08	-.11
SOB	0.15	0.01	0.18	0.14	0.02	0.22	-.20	-.28	0.11	-.12	-.27	-.04	-.03	0.08	-.08	-.21	0.09	-.11
SYG	0.19	0.14	0.08	0.01	0.11	0.26	-.11	-.27	-.19	0.03	0.02	0.01	-.07	-.04	-.07	0.13	0.22	0.04
SOG	0.24	0.23	0.23	0.09	0.07	0.23	-.20	-.34	0.0	0.03	-.06	0.10	-.07	-.10	0.05	-.06	-.01	0.08

UNIPOLAR SCALE NO. 77

											P-W							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.04	0.12	-.07	-.03	0.02	-.02	-.07	0.05	0.04	0.02	0.56	0.20	0.22	0.06	0.13	0.12	0.06	0.06
FOB	0.03	0.05	0.01	-.15	0.03	-.06	-.12	0.07	-.05	0.09	0.54	0.04	0.04	0.10	0.14	0.17	0.10	0.05
FYG	0.18	0.23	0.11	-.02	0.02	-.04	-.24	-.10	0.07	0.23	0.45	-.02	0.14	-.08	0.09	0.23	0.16	0.07
FOG	0.06	0.06	0.04	0.10	-.03	0.0	-.15	-.07	0.01	0.15	0.54	0.12	0.18	0.03	0.20	0.04	0.24	-.09
SYB	0.06	0.02	0.06	0.0	0.01	-.12	-.09	0.01	-.01	0.16	0.44	0.09	0.15	0.13	0.09	0.05	-.12	-.01
SOB	0.15	0.29	0.17	0.14	0.14	-.03	-.22	-.12	-.20	0.21	0.58	0.11	0.21	0.17	0.07	0.06	0.0	0.03
SYG	0.27	0.26	0.14	-.04	-.08	-.12	-.22	-.02	0.05	0.35	0.62	0.05	0.17	0.03	0.09	0.13	0.18	0.03
SOG	0.08	-.04	0.05	0.06	0.08	0.0	0.05	0.04	-.10	0.08	0.56	0.09	0.27	0.02	-.05	-.09	-.09	-.04

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 78

																P-W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.17	0.10	0.06	0.04	0.0	-.08	-.15	-.06	-.05	0.08	0.09	0.18	-.02	0.14	-.04	0.45	0.05	0.07
FOB	0.20	0.09	0.08	-.02	0.08	0.12	-.05	0.02	-.20	0.0	0.07	0.08	0.03	0.08	-.03	0.44	0.02	0.10
FYG	0.27	0.19	0.22	0.07	0.0	-.14	-.24	-.17	0.05	0.33	0.13	0.13	0.05	-.09	0.05	0.55	0.17	0.30
FOG	0.13	0.19	0.11	0.05	0.06	-.16	-.20	-.09	-.16	0.15	-.03	0.26	0.09	0.08	0.02	0.53	0.07	0.30
SYB	0.15	0.08	0.08	0.0	-.12	-.06	-.09	-.02	0.08	0.20	0.02	0.12	0.02	0.02	0.0	0.34	0.09	-.04
SOB	0.21	0.17	0.09	0.09	0.16	-.11	-.04	-.07	-.06	0.11	0.17	0.09	0.06	0.14	0.03	0.44	-.06	0.22
SYG	0.17	0.12	0.03	-.02	-.10	-.16	-.16	-.04	0.01	0.25	-.02	0.07	0.0	-.01	-.02	0.56	0.07	0.20
SOG	0.33	0.22	0.10	-.05	-.15	-.13	-.25	-.06	0.07	0.23	-.01	0.14	0.17	0.14	-.06	0.38	0.0	0.09

UNIPOLAR SCALE NO. 79

											P-W							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.10	0.02	-.05	0.02	0.04	0.07	-.01	0.07	0.01	0.03	0.58	0.14	0.14	0.11	0.23	-.10	-.13	-.12
FOB	-.13	-.02	-.06	0.15	0.22	0.28	0.06	0.20	-.19	-.06	0.40	0.13	0.33	0.24	0.23	-.04	-.10	-.10
FYG	0.02	0.10	0.06	0.04	0.09	0.03	-.14	0.01	-.01	0.06	0.53	0.19	0.19	0.12	0.15	-.02	0.04	-.04
FOG	0.02	-.02	-.02	0.0	0.03	0.09	-.02	0.08	-.15	-.01	0.45	0.07	0.23	0.12	0.18	-.10	0.06	-.21
SYB	0.04	0.01	-.08	0.17	0.16	-.10	-.08	0.02	-.04	0.06	0.51	0.18	0.27	0.15	0.21	-.03	-.24	-.07
SOB	-.03	0.01	-.11	0.09	0.05	0.05	0.02	0.16	-.06	0.0	0.42	0.03	0.21	0.10	0.10	-.03	-.15	-.01
SYG	-.09	-.04	-.15	-.02	0.28	0.14	0.10	0.05	-.18	-.16	0.48	0.10	0.08	0.20	0.21	-.15	-.31	-.23
SOG	-.15	-.17	0.01	0.09	0.0	0.0	0.13	0.15	-.15	-.08	0.53	0.14	0.29	0.21	0.09	-.16	-.15	-.24

UNIPOLAR SCALE NO. 80

																P-W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.01	0.04	-.02	0.04	-.01	-.05	-.01	0.0	-.08	0.05	-.02	0.06	0.09	0.05	0.14	0.23	-.06	0.10
FOB	0.04	0.03	0.06	0.06	0.09	0.17	0.02	0.08	-.11	-.08	0.08	0.15	0.04	0.15	-.08	0.21	-.06	-.06
FYG	0.17	-.03	0.03	0.05	-.09	-.08	0.02	0.11	0.11	-.02	0.06	0.04	0.02	0.01	-.15	0.20	0.08	0.06
FOG	0.11	0.13	0.14	0.08	0.14	0.03	-.16	-.12	-.16	0.08	0.08	0.11	0.09	0.14	0.06	0.27	0.08	-.06
SYB	0.02	-.04	-.04	0.0	0.13	0.12	-.01	0.07	-.19	0.01	0.11	0.0	-.04	0.08	0.03	0.21	-.09	0.06
SOB	0.02	-.07	0.0	0.08	0.14	0.01	0.04	0.06	-.12	-.13	0.12	0.0	0.10	0.21	-.02	0.17	-.17	-.01
SYG	0.12	0.06	0.02	0.10	0.19	0.17	0.02	-.17	-.11	-.16	0.0	0.02	0.05	0.09	-.05	0.25	-.05	-.02
SOG	0.12	0.16	0.13	-.02	0.22	0.08	-.11	-.13	-.14	-.06	0.0	-.07	-.10	-.04	-.05	0.28	0.08	-.08

UNIPOLAR SCALE NO. 81

											P-W							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.02	0.02	-.05	0.06	0.13	0.11	-.01	0.06	-.11	-.01	0.31	0.11	0.21	-.04	0.12	0.01	-.01	-.08
FOB	0.15	0.09	0.10	0.0	-.05	-.04	-.15	-.10	0.0	0.11	0.22	0.12	0.03	0.18	-.02	0.11	0.16	0.15
FYG	0.04	0.14	0.06	0.03	0.02	-.08	-.11	-.10	0.02	0.12	0.30	0.07	0.32	0.03	0.01	0.11	0.22	0.01
FOG	0.10	0.05	-.01	0.0	-.03	-.01	-.12	-.14	-.05	0.05	0.19	-.01	-.09	-.03	0.22	0.02	0.09	-.11
SYB	0.10	0.07	0.11	0.05	0.02	-.11	-.13	-.07	0.05	0.10	0.26	-.06	0.10	0.07	0.21	0.08	0.05	-.07
SOB	0.15	0.05	0.0	0.03	0.18	-.03	0.0	-.04	-.06	0.02	0.08	-.05	0.05	0.05	0.19	0.04	-.14	0.04
SYG	0.03	0.16	0.11	0.0	-.02	-.02	-.16	0.03	0.07	0.07	0.20	0.08	0.04	0.05	0.07	0.03	0.09	0.02
SOG	-.16	-.06	0.0	-.04	0.0	-.03	0.09	0.03	-.07	-.07	0.13	-.05	-.04	0.02	0.14	-.05	0.02	-.03

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 82

																P-W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.24	0.13	-.02	-.09	0.01	-.07	-.15	-.13	-.08	0.13	-.05	0.05	0.06	-.16	-.03	0.56	0.35	0.20
FOB	0.25	0.19	-.05	-.10	-.08	-.06	-.16	0.03	-.08	0.13	0.11	-.03	0.02	0.04	0.07	0.43	0.22	0.36
FYG	0.10	0.16	0.08	0.02	-.20	-.06	-.15	-.04	0.0	0.10	0.24	0.04	0.04	0.01	0.13	0.38	-.01	0.12
FOG	0.15	0.21	0.26	0.08	0.18	-.08	-.29	-.15	-.03	0.13	-.10	0.26	0.21	0.05	0.05	0.51	0.05	0.28
SYB	0.19	0.15	0.02	-.11	-.01	-.08	-.22	0.05	-.10	0.14	0.10	0.04	0.05	-.09	-.05	0.58	0.23	0.22
SOB	0.04	-.10	-.07	0.03	0.07	0.04	0.12	0.07	-.04	-.10	-.09	-.06	-.14	0.0	0.14	0.26	-.13	-.01
SYG	0.23	0.18	-.10	-.08	0.02	0.03	-.11	-.08	-.06	0.03	0.05	-.11	-.01	-.11	-.09	0.52	0.18	0.18
SOG	0.17	0.05	0.01	-.18	0.05	0.06	-.10	-.06	-.02	0.03	-.17	-.13	-.12	-.18	-.02	0.51	0.37	0.19

UNIPOLAR SCALE NO. 83

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.09	0.0	0.04	0.05	0.04	-.12	-.03	-.01	-.13	0.04	0.12	0.20	0.21	0.11	0.07	0.28	0.01	0.02
FOB	0.11	0.04	0.24	0.18	-.05	-.17	-.15	0.05	0.11	0.16	0.11	0.21	0.30	0.16	0.18	0.12	-.14	0.08
FYG	0.25	0.26	0.26	0.28	-.01	-.26	-.29	-.22	-.03	0.27	-.08	0.08	0.22	0.04	-.07	0.21	0.21	0.15
FOG	0.31	0.26	0.21	0.14	0.15	-.30	-.28	-.25	-.19	0.37	0.16	0.27	0.41	0.01	-.01	0.36	0.07	0.17
SYB	0.13	0.15	0.12	-.05	-.06	-.07	-.12	-.02	-.02	0.12	0.0	0.18	0.01	0.09	0.13	0.13	-.03	0.11
SOB	0.21	0.24	0.21	0.19	0.26	-.06	-.19	-.14	-.09	0.18	0.20	0.34	0.05	0.18	0.10	0.15	-.08	0.01
SYG	0.23	0.25	0.19	0.18	-.03	-.02	-.24	-.16	-.01	0.18	0.07	0.25	0.21	0.16	-.05	0.24	0.08	-.05
SOG	0.23	0.21	0.22	0.27	0.08	0.11	-.21	-.27	-.18	0.18	0.19	0.31	0.14	0.09	-.12	0.01	0.05	-.02

UNIPOLAR SCALE NO. 84

											P-W							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.19	0.28	0.07	0.01	-.02	-.11	-.25	-.09	0.01	0.23	0.70	0.17	0.17	0.21	0.06	0.16	-.02	0.09
FOB	0.14	0.24	0.20	0.01	0.03	-.18	-.36	0.0	-.02	0.28	0.78	0.24	0.32	0.14	0.26	0.25	0.13	0.11
FYG	0.32	0.38	0.23	0.13	-.02	-.16	-.47	-.23	0.06	0.20	0.74	0.30	0.14	0.06	0.38	0.31	0.17	0.13
FOG	0.21	0.22	0.13	0.12	-.05	-.28	-.30	-.16	-.11	0.22	0.78	0.17	0.16	0.05	0.35	0.02	0.29	-.17
SYB	0.30	0.26	0.14	-.15	-.02	-.37	-.33	-.02	0.07	0.45	0.78	0.21	0.20	0.11	0.13	0.22	-.06	0.14
SOB	0.27	0.17	0.06	0.02	-.02	-.24	-.20	0.02	0.0	0.31	0.74	0.18	0.24	0.18	0.30	0.09	0.01	0.10
SYG	0.22	0.25	0.14	0.13	0.02	-.13	-.29	-.06	0.02	0.24	0.74	0.22	0.26	0.25	0.16	0.24	0.08	0.10
SOG	0.07	0.03	0.02	0.05	0.16	0.01	-.02	0.11	-.18	0.08	0.73	0.12	0.19	0.11	0.25	-.09	-.16	-.09

UNIPOLAR SCALE NO. 85

																P-W		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.57	0.39	0.29	0.04	-.16	-.29	-.55	-.29	0.03	0.39	0.10	0.09	0.13	-.03	-.04	0.60	0.32	0.32
FOB	0.50	0.45	0.20	0.0	-.06	-.16	-.53	-.21	-.06	0.36	0.27	0.18	0.11	-.01	0.04	0.72	0.38	0.33
FYG	0.55	0.52	0.34	0.19	-.03	-.34	-.58	-.42	0.02	0.47	0.18	0.11	0.13	-.04	0.12	0.66	0.37	0.34
FOG	0.63	0.50	0.28	0.18	0.02	-.33	-.64	-.45	-.11	0.52	0.25	0.19	0.11	0.0	0.0	0.66	0.33	0.30
SYB	0.46	0.35	0.24	0.11	0.11	-.06	-.39	-.28	-.04	0.28	0.03	0.14	0.13	0.09	0.05	0.47	0.07	0.30
SOB	0.46	0.21	0.19	-.03	0.04	-.18	-.34	-.19	-.05	0.24	0.09	0.14	-.05	-.11	0.05	0.45	0.09	0.18
SYG	0.43	0.27	0.19	0.06	-.10	-.28	-.40	-.25	0.02	0.37	0.05	0.03	0.10	-.08	-.07	0.61	0.34	0.18
SOG	0.44	0.21	0.18	-.03	-.06	-.21	-.39	-.05	-.02	0.20	-.01	-.06	0.05	-.05	0.0	0.51	0.10	0.25

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 86

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      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
FYB   0.25  0.24  0.26  0.14  0.09  0.11  -.16  -.25  -.03  0.11  -.12  0.01  -.05  -.02  -.11  0.16  0.07  0.08
FOB   0.19  0.07  0.09  0.06  0.02  0.06  -.11  -.30  -.07  0.06  -.12  -.14  -.17  -.26  -.05  0.17  0.03  0.02
FYG   0.31  0.32  0.18  0.10  0.08  -.03  -.21  -.34  0.08  0.21  0.03  -.18  0.16  -.30  -.02  0.14  0.26  0.09
FOG   0.31  0.30  0.21  0.14  0.05  -.05  -.26  -.33  0.08  0.31  0.02  0.14  0.04  -.16  -.11  0.32  0.13  0.28
SYB   0.09  0.15  0.21  0.13  0.17  0.08  -.14  -.20  -.08  0.05  0.02  0.14  0.02  0.19  0.07  0.09  -.05  -.11
SOB   0.26  0.19  0.15  0.04  0.0   0.04  -.23  -.25  -.02  0.21  -.06  0.16  -.02  0.06  -.15  0.17  0.10  -.01
SYG   0.20  0.21  0.19  0.08  -.04  0.07  -.15  -.23  -.04  0.21  -.03  0.13  -.02  -.14  -.07  0.21  0.21  0.09
SOG   0.28  0.21  0.14  0.08  -.11  0.07  -.29  -.32  0.02  0.16  -.11  0.05  0.01  -.11  -.03  0.17  0.04  0.14
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UNIPOLAR SCALE NO. 87

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      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
FYB   0.21  0.19  0.09  0.06  -.11  -.07  -.17  -.16  -.05  0.21  0.05  0.16  -.12  0.11  -.07  0.10  0.03  -.04
FOB   0.05  0.03  -.01  -.01  -.07  0.05  -.13  -.16  0.08  0.01  0.25  0.01  -.12  -.08  -.05  0.08  -.03  -.03
FYG   0.21  0.25  0.16  0.03  0.0   -.01  -.19  -.15  0.08  0.15  0.31  -.0[illegible]  0.20  -.26  -.01  0.14  0.11  0.18
FOG   0.24  0.18  0.06  0.0   0.03  -.05  -.14  -.18  0.06  0.18  0.35  0.04  0.11  -.05  -.03  -.03  0.10  -.05
SYB   0.08  0.05  0.02  0.0   -.01  -.14  -.04  -.14  0.02  0.07  0.17  -.03  0.06  -.06  0.07  -.02  -.11  -.09
SOB   0.20  0.13  0.11  0.08  0.0   0.04  -.17  -.17  0.01  0.16  0.24  0.05  0.26  -.05  -.06  -.03  0.14  -.01
SYG   0.05  0.20  0.25  0.20  0.12  0.11  -.18  -.17  -.10  0.04  0.14  0.11  0.04  -.02  -.12  0.12  0.12  0.14
SOG   0.21  0.20  0.12  0.15  0.03  0.13  -.13  -.18  -.15  0.09  0.23  0.[illegible]  0.06  -.01  -.02  -.05  0.04  0.01
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UNIPOLAR SCALE NO. 88

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      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
FYB   0.36  0.32  0.17  -.13  -.23  -.43  -.50  -.16  0.14  0.41  0.17  0.23  0.0   -.02  0.04  0.35  0.35  0.43
FOB   0.41  0.25  0.20  -.18  -.20  -.37  -.40  -.09  0.06  0.40  0.07  0.09  0.07  -.10  0.16  0.40  0.37  0.31
FYG   0.38  0.38  0.20  -.02  -.21  -.33  -.44  -.11  0.20  0.46  0.29  0.24  0.26  -.01  0.21  0.42  0.32  0.25
FOG   0.36  0.28  0.24  -.03  -.03  -.32  -.40  -.28  -.04  0.36  0.02  0.20  -.04  -.05  0.11  0.37  0.48  0.23
SYB   0.29  0.37  0.02  -.26  -.23  -.48  -.38  0.03  0.24  0.42  0.26  -.03  0.08  -.08  0.02  0.35  0.34  0.29
SOB   0.37  0.24  0.15  -.14  -.12  -.47  -.38  -.18  0.18  0.35  0.12  0.07  -.04  -.11  0.07  0.28  0.15  0.35
SYG   0.34  0.31  0.21  -.08  -.19  -.45  -.50  -.13  0.19  0.39  0.17  -.02  0.11  -.08  0.02  0.30  0.35  0.29
SOG   0.42  0.21  0.06  -.19  -.19  -.43  -.44  -.08  0.05  0.36  -.10  -.32  -.10  -.29  0.0   0.42  0.39  0.31
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UNIPOLAR SCALE NO. 89

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      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
FYB   0.01  0.14  -.03  0.08  -.01  -.08  -.10  0.02  -.08  0.06  0.18  0.24  0.15  0.16  0.10  0.18  0.01  0.18
FOB   -.04  0.12  0.06  0.02  0.05  -.08  -.09  0.09  -.01  0.03  0.18  0.24  0.26  0.09  0.09  0.20  0.18  0.19
FYG   0.10  0.14  0.15  0.06  -.12  -.12  -.18  -.01  0.09  0.18  0.19  0.27  0.14  0.12  0.17  0.32  0.12  0.32
FOG   0.09  0.13  0.03  -.10  -.09  -.12  -.16  0.01  0.08  0.08  -.02  0.22  0.13  0.14  -.04  0.27  0.08  0.25
SYB   -.04  0.06  0.0   -.05  0.03  -.16  -.09  0.03  -.07  0.04  0.19  0.20  0.23  0.18  0.0   0.14  -.14  0.22
SOB   -.08  0.08  0.06  -.03  0.04  -.15  -.08  0.15  0.0   0.05  0.05  0.15  0.12  0.08  -.07  0.11  -.02  0.28
SYG   -.04  -.03  0.01  0.02  -.10  -.17  -.13  0.12  0.03  0.23  0.20  0.19  0.24  0.11  0.04  0.24  0.05  0.30
SOG   0.05  0.04  -.07  -.02  -.06  -.12  -.09  0.08  0.09  0.16  0.10  -.01  0.06  -.10  0.0   0.07  0.06  0.14
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UNIPOLAR SCALES

UNIPOLAR SCALE NO. 90

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.09	-.07	-.10	-.23	-.07	-.12	-.06	0.21	0.16	0.10	0.08	0.15	-.09	0.09	-.02	0.20	0.07	0.09
FOB	-.07	-.01	-.10	0.12	0.22	0.19	0.05	0.17	-.16	-.26	0.08	0.07	0.07	0.12	-.03	0.07	0.02	0.04
FYG	0.03	-.11	0.04	0.22	-.12	-.02	-.01	0.09	-.07	-.13	0.15	0.14	0.20	-.06	0.0	0.05	0.08	0.0
FOG	-.08	0.14	-.16	0.0	0.04	0.11	0.07	0.15	-.02	-.16	0.08	0.05	-.04	0.10	-.01	0.12	0.04	0.10
SYB	-.07	0.10	0.07	-.01	-.06	0.02	-.07	0.03	-.08	-.02	-.05	0.05	0.22	0.11	-.09	0.06	0.03	0.12
SOB	0.09	-.09	0.05	0.05	0.26	0.31	0.04	0.04	-.16	-.24	-.02	-.08	0.0	0.03	0.16	-.02	-.07	0.04
SYG	0.07	0.07	0.06	-.04	-.08	-.22	-.06	0.02	0.14	0.22	0.05	0.06	0.01	-.02	-.12	0.03	0.04	0.07
SOG	-.02	0.0	0.09	-.02	-.04	-.07	0.01	-.01	-.05	0.02	0.04	0.04	0.22	-.04	0.02	0.03	-.08	0.16

UNIPOLAR SCALE NO. 91

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.27	-.32	-.40	-.09	0.06	0.05	0.42	0.36	0.08	-.18	0.13	0.08	0.0	0.04	0.12	-.09	0.06	0.03
FOB	-.17	-.10	-.24	-.21	0.13	-.06	0.21	0.27	-.04	-.04	0.10	0.11	0.20	0.16	-.03	0.09	0.03	-.09
FYG	-.07	-.12	-.21	-.07	0.05	0.07	0.08	0.14	-.02	-.12	0.16	0.17	0.07	0.27	0.07	-.02	-.07	-.09
FOG	-.08	-.07	-.26	-.13	0.15	0.07	0.20	0.19	0.05	-.09	0.14	0.07	0.03	0.05	0.08	-.03	0.09	-.12
SYB	0.01	0.09	-.18	-.04	0.10	0.06	0.08	0.13	-.18	0.03	0.06	-.06	0.14	0.13	0.02	0.06	-.07	0.06
SOB	0.04	-.13	-.35	-.28	-.07	-.04	0.15	0.32	0.05	-.09	0.11	-.13	0.05	0.11	0.21	0.08	-.07	0.15
SYG	-.06	0.05	-.15	-.13	-.01	-.03	0.03	0.27	-.03	0.05	0.14	0.12	0.26	0.19	0.10	-.01	-.06	0.04
SOG	-.20	-.08	-.19	0.09	-.05	-.01	0.29	0.19	0.02	-.07	0.17	0.07	0.19	0.14	-.01	-.07	-.12	-.10

UNIPOLAR SCALE NO. 92

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.04	-.08	-.15	-.17	-.17	-.15	0.13	0.22	0.17	0.20	0.15	0.25	-.01	0.09	0.03	0.09	0.03	-.04
FOB	-.16	-.10	-.10	-.25	-.04	-.06	0.28	0.19	0.16	0.0	0.03	0.10	0.07	0.12	-.02	-.09	-.01	-.15
FYG	-.10	0.0	-.24	-.04	-.14	0.01	0.07	0.13	0.08	-.11	0.23	0.09	0.09	0.03	0.01	0.08	-.02	-.11
FOG	-.23	-.07	0.05	0.06	-.01	-.03	0.14	0.06	0.02	0.04	0.11	0.14	0.11	0.04	0.09	-.23	-.07	-.17
SYB	-.09	0.04	0.03	-.12	-.28	-.15	-.12	0.18	0.09	0.13	0.16	0.0	0.09	0.08	-.01	0.02	0.02	0.17
SOB	-.21	-.10	-.15	-.03	-.21	-.12	0.10	0.15	0.07	0.02	0.06	0.01	0.04	0.04	0.04	-.04	0.0	0.03
SYG	-.01	-.07	-.02	-.18	-.15	-.11	0.06	0.26	0.21	0.10	0.11	-.07	0.10	-.01	0.03	-.02	-.06	-.03
SOG	-.04	-.07	0.04	-.20	-.31	-.15	0.05	0.23	0.29	0.13	0.09	0.23	0.12	0.07	0.35	0.05	0.03	-.12

UNIPOLAR SCALE NO. 93

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.01	-.09	-.02	0.0	0.07	-.06	-.03	-.02	0.05	-.04	-.14	0.08	-.04	0.0	-.01	0.16	0.07	0.01
FOB	-.14	-.01	0.16	0.26	0.05	-.16	0.08	0.04	0.03	0.11	0.06	0.23	0.22	0.14	0.08	0.02	-.22	-.07
FYG	-.04	-.02	0.03	0.31	-.20	0.05	-.02	0.07	0.02	-.08	-.06	0.27	0.07	0.12	-.05	0.09	-.06	0.09
FOG	-.01	0.06	0.19	0.17	-.04	-.24	-.09	0.06	0.09	0.06	0.09	0.25	0.16	0.20	-.01	0.18	0.09	0.14
SYB	0.05	0.04	0.05	0.04	-.17	-.16	-.04	0.11	0.05	0.11	0.05	0.04	0.05	0.08	0.0	0.18	0.03	0.17
SOB	-.08	-.16	-.03	0.05	-.16	-.07	0.01	0.06	-.05	-.03	0.0	-.07	0.19	0.0	0.06	0.12	-.18	0.10
SYG	-.13	-.05	0.06	-.05	-.09	-.18	0.01	0.10	0.13	0.17	0.01	0.0	0.01	0.04	0.15	-.04	0.07	0.10
SOG	-.09	-.14	0.09	0.20	-.03	-.09	-.03	0.19	-.04	0.03	-.01	0.18	0.14	0.08	0.0	0.04	-.04	0.10

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 94

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.13	0.20	0.02	0.09	0.06	-.20	-.17	0.04	-.17	0.07	0.30	0.36	0.14	0.12	0.07	0.30	-.06	0.06
FOB	0.15	0.23	0.09	-.02	0.03	-.36	-.23	0.08	0.0	0.23	0.34	0.33	0.12	0.08	0.09	0.23	0.15	0.05
FYG	0.16	0.12	0.08	0.16	-.14	-.09	-.23	0.08	0.09	0.13	0.33	0.32	0.13	0.14	0.20	0.41	0.09	0.22
FOG	0.18	0.17	0.35	0.30	0.13	-.36	-.30	-.12	-.10	0.26	0.11	0.45	0.18	0.09	0.17	0.45	0.13	0.24
SYB	0.15	0.22	-.01	-.09	0.0	-.38	-.29	0.19	-.07	0.35	0.48	0.11	0.29	0.17	0.0	0.37	-.05	0.32
SOB	0.13	0.17	0.05	-.09	0.19	-.38	-.20	0.13	-.17	0.27	0.52	0.24	0.26	0.25	0.07	0.30	-.14	0.34
SYG	-.01	0.0	0.01	-.04	-.14	-.38	-.22	0.30	0.18	0.31	0.39	0.09	0.29	0.32	0.06	0.15	-.02	0.19
SOG	0.01	-.10	-.09	0.01	0.01	-.26	-.08	0.37	0.02	0.17	0.24	0.10	0.25	0.16	0.04	0.26	-.01	0.19

UNIPOLAR SCALE NO. 95

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	P-W (13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.0	0.14	0.31	0.31	0.02	-.06	-.17	-.06	-.20	0.10	0.32	0.79	0.21	0.44	0.24	0.21	-.09	0.03
FOB	0.0	0.24	0.50	0.38	0.25	-.09	-.28	-.07	-.21	0.19	0.41	0.82	0.37	0.52	0.24	0.20	-.01	0.03
FYG	0.02	0.12	0.34	0.43	-.09	-.04	-.26	-.11	-.18	0.07	0.31	0.78	0.24	0.33	0.25	0.20	0.04	0.07
FOG	-.13	0.09	0.38	0.27	0.04	-.32	-.10	-.02	-.07	0.23	0.28	0.78	0.29	0.43	0.23	0.14	0.05	-.02
SYB	0.0	-.02	0.21	0.26	0.04	0.04	-.02	-.01	-.20	0.01	0.17	0.73	0.06	0.29	0.14	0.13	0.06	0.08
SOB	0.03	0.15	0.32	0.27	0.10	-.18	-.14	-.03	-.20	0.22	0.33	0.72	0.17	0.29	0.19	0.24	-.25	0.10
SYG	-.09	0.07	0.29	0.39	0.05	0.02	-.12	-.07	-.11	0.25	0.22	0.78	0.20	0.37	0.25	0.06	-.24	-.08
SOG	-.11	-.02	0.11	0.25	0.08	0.06	0.07	0.04	-.17	0.10	0.28	0.69	0.19	0.41	0.19	0.0	-.23	-.11

UNIPOLAR SCALE NO. 96

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	P-W (13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.02	0.17	0.28	0.27	0.07	-.07	-.16	-.11	-.27	0.11	0.11	0.68	0.07	0.39	0.13	0.16	-.06	0.01
FOB	-.03	0.20	0.47	0.34	0.09	-.22	-.32	-.10	-.15	0.24	0.26	0.78	0.27	0.32	0.26	0.04	-.05	-.02
FYG	0.05	0.14	0.34	0.32	-.16	-.10	-.17	0.0	-.05	0.05	0.18	0.71	0.14	0.23	0.06	0.15	0.18	0.12
FOG	0.06	0.25	0.46	0.29	0.06	-.41	-.23	-.09	-.05	0.28	0.19	0.78	0.30	0.28	0.04	0.34	0.02	0.29
SYB	-.01	0.02	0.16	0.24	0.07	0.17	-.02	0.03	-.22	-.04	0.08	0.55	0.01	0.29	0.09	0.02	-.11	0.08
SOB	0.10	0.23	0.27	0.20	0.13	0.02	-.17	-.20	-.20	0.24	0.14	0.65	0.12	0.21	0.10	0.20	-.07	0.04
SYG	-.12	-.01	0.14	0.32	0.08	0.13	-.05	-.08	-.21	0.11	-.04	0.69	0.13	0.25	0.0	0.10	-.10	0.01
SOG	-.12	0.15	0.23	0.30	0.09	0.04	0.03	-.18	-.13	0.15	-.06	0.68	-.07	0.25	0.18	-.10	-.23	-.10

UNIPOLAR SCALE NO. 97

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.05	0.06	-.12	-.08	0.02	-.12	-.02	0.10	-.09	0.11	0.26	0.28	0.28	0.17	0.05	0.29	0.22	0.07
FOB	0.03	0.19	0.28	0.08	0.25	-.17	-.21	-.02	-.23	0.23	0.28	0.55	0.23	0.18	0.09	0.31	0.20	0.11
FYG	0.16	0.28	0.31	0.24	-.17	-.17	-.30	-.18	-.10	0.25	0.31	0.52	0.19	0.21	0.18	0.32	0.10	0.22
FOG	0.15	0.22	0.24	0.24	0.12	-.17	-.22	-.17	-.05	0.23	0.16	0.42	0.31	0.22	0.15	0.31	0.22	0.06
SYB	0.04	0.06	0.02	0.11	0.22	-.02	-.07	0.02	-.17	0.0	0.17	0.13	0.04	-.01	-.01	0.14	0.17	0.12
SOB	0.19	0.05	0.02	-.05	0.23	-.04	-.08	0.0	-.18	0.0	0.12	0.13	0.08	0.06	0.11	0.29	-.04	0.23
SYG	0.14	0.11	-.07	-.02	-.01	-.02	-.10	0.01	-.11	0.19	0.21	0.20	0.24	0.16	0.0	0.29	0.10	-.02
SOG	-.05	0.05	-.01	0.0	0.04	-.07	0.06	0.07	-.06	0.11	-.02	0.15	-.12	-.01	-.01	0.09	0.11	0.03

UNIPOLAR SCALES

UNIPOLAR SCALE NO. 98

												P-W						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.23	0.19	0.12	0.10	-.03	-.16	-.13	-.17	-.10	0.19	0.19	0.59	0.08	0.15	0.05	0.29	0.05	0.09
FOB	-.04	0.13	0.40	0.33	0.07	-.19	-.16	-.01	-.08	0.16	0.29	0.80	0.38	0.36	0.07	0.21	-.04	-.02
FYG	0.04	0.20	0.34	0.35	-.18	-.12	-.22	-.08	-.03	0.12	0.18	0.60	0.27	0.19	0.03	0.30	0.08	0.26
FOG	0.17	0.27	0.43	0.36	0.11	-.33	-.33	-.22	0.11	0.32	0.17	0.74	0.30	0.23	0.05	0.50	0.20	0.29
SYB	0.07	0.10	0.11	0.14	0.07	0.07	-.12	0.0	-.05	0.06	0.12	0.40	0.18	0.17	0.04	0.11	-.12	0.09
SOB	0.02	0.07	0.19	0.26	0.10	-.07	-.16	-.15	-.08	0.11	0.05	0.45	0.01	0.15	0.05	0.27	-.05	0.14
SYG	-.11	0.02	0.19	0.24	0.05	0.01	-.15	-.02	0.08	0.11	0.13	0.41	0.20	0.21	0.06	-.02	0.01	0.03
SOG	-.07	0.01	0.07	0.11	0.0	0.01	-.06	0.05	-.13	0.04	0.0	0.49	0.05	0.15	0.02	0.03	-.05	0.02

UNIPOLAR SCALE NO. 99

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.03	0.05	-.04	-.19	-.11	-.22	-.20	0.04	0.13	0.24	-.09	0.05	0.01	-.14	-.13	0.10	0.21	0.0
FOB	0.20	0.14	0.08	0.03	0.0	-.11	-.18	-.11	-.10	0.23	0.11	0.08	-.03	0.04	0.06	0.10	0.15	0.15
FYG	0.27	0.08	0.11	0.02	-.28	-.35	-.19	0.01	0.22	0.24	-.03	0.13	-.01	0.12	-.15	0.16	0.02	0.24
FOG	-.26	-.07	0.05	-.06	-.03	0.08	0.12	0.10	0.06	-.22	-.17	0.05	0.03	0.19	-.07	-.17	-.17	0.14
SYB	0.09	0.11	0.03	0.04	-.01	0.06	-.18	0.07	-.08	0.11	-.02	0.02	-.07	0.10	-.11	0.07	-.04	0.13
SOB	0.09	0.16	0.14	0.11	0.0	-.02	-.23	-.17	-.02	0.11	0.0	0.01	-.06	-.13	0.11	-.01	0.01	0.08
SYG	-.18	-.16	0.04	0.01	0.08	0.12	0.15	0.03	0.01	-.12	-.07	0.10	-.13	0.07	0.05	-.14	-.19	-.03
SOG	0.05	0.09	0.09	0.02	0.10	0.06	-.09	-.12	-.09	0.07	-.12	-.02	-.11	-.09	-.06	-.03	0.17	-.02

UNIPOLAR SCALE NO.100

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.10	-.08	-.06	0.0	0.03	0.06	0.16	-.03	-.03	-.01	-.02	0.17	-.11	0.11	0.11	-.01	-.15	-.11
FOB	-.21	0.0	-.17	-.07	-.03	0.12	0.06	-.04	-.04	-.05	0.13	0.24	0.14	0.16	-.10	0.07	-.07	-.12
FYG	-.24	-.29	-.32	-.06	0.03	0.18	0.28	0.23	-.05	-.28	0.0	-.07	-.10	-.01	-.20	-.14	-.04	-.13
FOG	-.08	-.01	0.06	0.06	-.06	0.08	0.07	0.13	0.08	0.08	0.07	0.20	0.12	0.11	-.18	0.19	0.04	0.16
SYB	-.19	-.12	-.10	-.02	-.06	0.20	0.21	-.02	0.06	-.23	-.14	0.05	-.15	-.10	0.03	-.21	0.06	-.06
SOB	-.06	0.05	-.06	-.08	-.05	0.18	0.10	-.15	0.08	-.10	-.13	0.07	-.13	-.08	-.09	-.03	0.12	-.14
SYG	0.13	0.02	0.11	0.01	0.0	0.17	-.08	-.07	0.03	-.02	0.05	0.01	-.15	-.12	0.09	0.07	0.12	-.02
SOG	0.10	0.13	0.02	0.08	0.05	0.10	0.01	-.15	-.11	-.13	0.0	0.10	-.06	-.14	-.03	0.10	0.13	0.03

UNIPOLAR SCALE NO.101 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.12	0.18	-.01	0.01	0.02	-.28	-.18	-.17	-.12	0.23	-.01	0.09	0.06	0.04	0.02	0.20	0.05	0.14
FOB	0.13	0.11	-.10	-.17	-.06	0.07	-.01	-.02	0.07	0.05	-.06	-.04	-.09	-.06	0.12	0.23	0.11	0.18
FYG	0.13	0.07	0.01	0.0	0.02	-.04	-.08	-.11	-.11	0.05	0.20	0.07	0.22	0.05	0.14	0.18	0.06	0.02
FOG	0.04	0.15	0.08	0.0	-.19	-.29	-.11	-.09	0.15	0.21	-.09	0.20	0.09	0.01	0.02	0.28	0.16	0.16
SYB	-.01	-.04	-.11	-.06	-.10	-.10	0.03	0.06	0.07	0.05	0.06	0.02	-.10	-.03	-.09	0.14	0.07	0.17
SOB	0.11	-.01	0.02	-.12	-.30	-.09	-.09	-.01	0.28	0.18	-.11	0.02	-.06	-.14	-.03	0.02	0.09	0.15
SYG	0.05	0.11	-.05	-.01	-.04	-.11	-.08	0.02	-.06	0.08	0.19	0.17	0.09	0.10	0.09	0.17	-.04	0.05
SOG	0.03	-.02	-.02	-.07	-.04	0.04	0.13	0.01	0.06	-.11	-.12	0.06	-.08	0.07	0.06	0.22	0.08	-.03

UNIPOLAR SCALES

UNIPOLAR SCALE NO.102

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.26	-.32	-.35	-.01	0.10	0.26	0.41	0.25	-.07	-.36	0.04	0.04	-.03	0.0	-.08	-.04	-.07	-.20
FOB	-.28	-.24	-.27	-.05	0.09	0.08	0.37	0.27	-.08	-.21	-.03	0.05	0.09	0.01	-.07	-.09	-.13	-.18
FYG	-.25	-.23	-.21	-.16	0.0	0.10	0.38	0.26	-.06	-.28	-.18	-.03	0.01	-.06	-.18	-.04	-.03	-.09
FOG	-.25	-.32	-.23	-.04	0.02	0.12	0.42	0.35	0.06	-.25	-.07	0.03	0.05	-.08	-.25	0.0	-.15	-.02
SYB	-.23	-.20	-.20	-.04	0.14	0.19	0.35	0.18	0.02	-.21	-.13	-.11	0.04	0.07	-.10	-.11	-.17	-.17
SOB	-.17	-.11	-.28	0.08	0.11	0.25	0.29	0.08	-.08	-.20	-.14	-.10	0.0	0.05	0.01	0.05	-.12	-.08
SYG	-.17	-.14	-.31	-.17	0.08	0.16	0.32	0.22	-.08	-.31	-.15	-.20	-.07	0.01	-.15	-.12	-.06	-.13
SOG	-.29	-.33	-.32	-.12	0.09	0.07	0.34	0.22	-.09	-.31	-.04	-.01	-.17	-.11	-.15	-.13	-.05	-.06

UNIPOLAR SCALE NO.103

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.02	0.05	0.10	0.02	-.04	-.04	-.11	0.06	0.14	0.15	-.02	0.01	-.08	0.01	-.04	0.06	0.07	0.02
FOB	0.16	0.14	0.13	0.06	-.28	-.19	-.14	0.18	0.30	0.21	0.13	0.29	0.07	0.17	0.01	0.07	-.02	-.16
FYG	0.10	0.14	0.14	0.28	-.19	-.16	-.20	-.04	0.14	0.19	0.16	0.20	0.11	0.01	0.11	0.17	0.10	0.11
FOG	0.15	0.15	0.24	0.26	-.04	-.35	-.17	-.08	0.21	0.30	0.07	0.43	0.17	0.0	0.08	0.33	0.05	0.17
SYB	0.14	0.12	0.12	0.09	0.0	-.16	-.20	-.07	0.0	0.19	0.27	0.06	0.13	0.02	0.15	0.10	-.02	0.0
SOB	0.04	0.02	0.01	-.02	-.13	-.08	-.14	0.06	0.11	0.10	0.02	-.05	0.03	-.16	-.04	0.04	0.15	0.05
SYG	0.12	0.03	0.03	-.05	-.12	-.01	-.03	-.02	0.09	0.21	0.05	0.14	0.08	0.03	-.01	0.11	0.11	0.09
SOG	0.07	0.05	-.03	-.09	-.22	-.19	-.09	0.15	0.29	0.16	0.02	-.01	0.01	0.08	0.15	-.01	0.01	0.02

UNIPOLAR SCALE NO.104

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.04	0.02	-.04	0.0	0.09	0.15	0.06	-.08	-.05	-.02	0.01	0.24	-.11	0.09	-.08	0.22	0.01	-.19
FOB	0.0	0.06	-.14	0.03	0.09	0.05	-.03	0.04	-.04	-.12	0.13	0.20	-.12	0.01	-.07	0.09	0.08	-.05
FYG	0.11	0.05	-.01	0.0	0.01	0.20	0.01	0.06	-.03	-.12	0.12	0.07	-.09	0.0	0.04	0.18	0.12	0.07
FOG	0.02	0.16	0.01	0.03	0.08	-.10	-.16	-.08	0.02	0.06	0.31	0.32	0.21	0.03	0.04	0.17	0.15	-.03
SYB	0.0	0.01	0.07	-.01	-.05	-.10	-.06	-.02	-.09	0.07	0.09	-.06	-.02	0.04	-.17	0.07	-.03	-.08
SOB	0.13	0.21	0.08	-.01	0.16	0.17	0.02	-.16	-.14	0.01	0.03	0.18	-.11	-.02	0.04	0.17	-.03	-.03
SYG	0.22	0.22	0.10	0.12	0.06	0.12	-.23	-.18	-.06	0.12	0.19	0.15	-.04	0.10	0.10	0.17	0.23	0.04
SOG	0.16	0.12	0.02	-.10	0.07	-.06	-.08	-.05	0.07	0.13	0.12	0.16	0.08	0.01	0.02	0.17	0.14	0.05

UNIPOLAR SCALE NO.105

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.07	0.03	0.0	-.04	0.09	0.01	-.01	0.01	-.06	0.09	0.14	0.03	0.05	-.05	0.01	0.01	0.04	0.05
FOB	0.09	0.07	0.10	0.0	-.05	-.09	-.09	0.12	0.04	0.09	0.09	0.21	0.23	0.12	0.19	0.14	0.01	0.05
FYG	0.16	0.15	0.13	0.02	0.03	0.03	-.15	-.13	-.02	0.09	0.16	0.08	-.10	0.01	0.03	0.15	0.10	0.08
FOG	-.05	0.06	-.03	-.07	-.13	-.05	-.11	0.04	0.19	-.08	0.25	0.02	0.13	-.01	0.0	-.05	0.09	-.03
SYB	0.10	0.12	0.07	0.08	0.12	-.16	-.10	-.08	-.13	0.18	0.38	0.10	0.28	0.18	0.21	0.03	-.05	-.08
SOB	0.09	0.11	0.13	0.08	0.11	-.21	-.12	-.03	0.04	0.24	0.15	0.09	0.13	0.14	0.13	0.15	-.04	0.09
SYG	0.0	0.06	0.06	0.06	0.16	-.02	-.08	-.01	-.21	-.02	0.32	0.09	0.15	0.25	0.04	0.08	0.04	0.06
SOG	-.09	-.15	-.02	-.02	-.12	0.08	0.13	0.18	0.08	0.02	0.28	0.05	0.25	-.01	-.05	-.01	0.01	-.11

UNIPOLAR SCALES

UNIPOLAR SCALF NO.106

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.46	-.36	-.25	0.08	0.09	0.14	0.41	0.33	0.01	-.26	-.04	0.04	0.0	0.0	0.02	-.27	-.09	-.28
FOB	-.23	-.18	-.26	-.11	0.01	0.13	0.22	0.30	-.04	-.18	0.05	-.04	0.02	0.03	-.17	0.03	-.09	-.07
FYG	-.15	0.0	0.0	0.03	0.07	0.14	0.07	0.10	-.04	-.21	0.07	0.12	-.12	0.08	0.05	-.17	-.06	-.16
FOG	-.19	-.32	-.19	-.22	-.01	0.20	0.34	0.45	0.08	-.42	-.07	-.14	-.20	0.01	-.04	-.17	-.02	-.06
SYB	-.49	-.33	-.20	0.09	0.0	0.22	0.43	0.19	-.04	-.44	-.13	-.05	-.12	0.08	-.04	-.36	-.14	-.20
SOB	-.30	-.31	-.50	-.08	-.16	0.22	0.40	0.29	-.08	-.20	-.10	-.15	0.01	0.01	0.01	-.04	-.15	-.11
SYG	-.37	-.33	-.25	-.11	0.09	0.23	0.40	0.23	-.09	-.37	-.04	-.03	-.11	-.03	0.01	-.17	-.07	-.16
SOG	-.10	-.25	-.05	-.02	0.12	0.18	0.12	0.14	-.14	-.41	0.04	-.03	0.06	0.07	-.11	-.12	-.11	-.01

UNIPOLAR SCALE NO.107

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.35	-.28	-.40	0.03	0.19	0.25	0.48	0.32	-.06	-.40	-.01	-.03	-.02	-.04	0.01	-.16	0.0	-.19
FOB	-.22	-.15	-.36	-.19	-.04	0.08	0.28	0.31	0.02	-.21	0.12	-.08	0.15	-.07	-.09	-.01	-.08	-.06
FYG	-.17	-.15	-.11	-.01	0.13	0.29	0.18	0.15	-.15	-.29	-.06	0.07	0.0	0.04	-.15	-.09	-.01	-.11
FOG	-.31	-.24	-.27	-.17	0.01	0.22	0.40	0.45	0.04	-.43	-.12	-.11	-.07	-.03	-.06	-.22	-.17	-.08
SYB	-.38	-.31	-.32	0.0	-.02	0.24	0.41	0.23	-.06	-.43	-.22	-.10	-.06	-.03	-.14	-.20	-.11	-.25
SOB	-.07	-.20	-.37	-.12	-.01	0.18	0.19	0.24	-.07	-.24	-.02	-.17	-.01	-.08	-.07	0.05	-.04	0.01
SYG	-.34	-.32	-.12	0.01	0.09	0.24	0.37	0.22	-.06	-.32	0.0	0.05	-.13	-.09	0.03	-.14	-.07	-.14
SOG	-.19	-.20	-.11	-.07	0.05	0.15	0.28	0.08	-.03	-.25	-.05	-.03	-.11	0.17	-.03	-.21	-.13	-.12

UNIPOLAR SCALE NO.108

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.42	-.37	-.49	-.06	0.12	0.30	0.58	0.36	-.05	-.38	0.09	-.01	-.09	-.08	0.01	-.22	-.22	-.25
FOB	-.26	-.23	-.32	-.13	-.02	0.08	0.43	0.39	0.07	-.19	-.01	-.17	-.03	-.09	-.08	-.06	-.10	-.05
FYG	-.25	-.25	-.32	-.15	0.16	0.22	0.31	0.28	0.01	-.36	-.01	-.23	-.16	-.08	0.01	-.12	-.10	-.15
FOG	-.14	-.17	-.26	-.16	0.04	0.20	0.33	0.37	-.07	-.32	-.05	-.09	-.07	0.01	0.02	-.19	-.05	-.09
SYB	-.36	-.32	-.43	0.02	0.03	0.20	0.43	0.31	-.04	-.36	-.15	-.13	-.03	0.05	-.05	-.13	-.17	-.25
SOB	-.11	-.22	-.41	-.19	-.05	0.27	0.27	0.35	-.05	-.19	-.07	-.20	-.07	-.05	0.08	0.08	-.01	-.06
SYG	-.27	-.21	-.35	-.06	0.06	0.23	0.34	0.31	-.06	-.35	0.02	-.04	0.12	0.15	-.03	-.02	-.07	-.05
SOG	-.15	-.22	-.06	-.07	0.10	0.11	0.19	0.12	-.04	-.22	-.04	-.13	-.15	-.09	-.19	0.03	0.09	-.10

UNIPOLAR SCALE NO.109

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.08	0.17	0.03	-.07	-.19	-.35	-.25	0.05	0.08	0.34	0.26	0.33	0.19	0.06	0.0	0.22	0.16	0.07
FOB	0.08	0.20	0.15	0.03	-.02	-.15	-.23	0.03	-.08	0.27	0.14	0.29	0.07	0.03	0.02	0.20	0.19	0.09
FYG	0.02	0.20	0.08	0.05	-.01	-.11	-.18	0.02	-.09	0.13	0.25	0.28	0.04	0.08	0.11	0.10	0.15	0.18
FOG	-.02	0.16	0.31	0.24	-.15	-.21	-.17	-.01	0.14	0.23	0.23	0.46	0.20	0.10	0.13	0.22	0.30	0.04
SYB	0.15	0.21	0.11	-.35	-.27	-.37	-.33	0.19	0.28	0.36	0.24	-.10	0.0	-.16	-.05	0.03	0.21	-.08
SOB	0.03	0.15	0.23	0.08	0.03	-.10	-.17	-.16	0.01	0.15	0.03	0.10	0.06	0.12	-.13	0.0	0.07	0.01
SYG	0.19	0.21	0.10	-.02	-.07	-.01	-.17	-.03	0.04	0.26	0.08	0.10	0.03	-.09	0.01	0.26	0.22	-.04
SOG	-.15	0.0	0.13	0.05	-.04	-.02	-.08	-.16	-.02	0.09	0.0	0.07	-.08	0.03	0.22	0.04	0.04	0.05

UNIPOLAR SCALES

UNIPOLAR SCALE NO.110 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.02	0.09	0.10	0.04	-.04	-.08	-.03	0.11	0.11	0.13	0.02	0.09	-.04	-.10	-.07	0.11	0.07	0.07
FOB	0.09	0.09	-.02	0.07	-.11	-.02	0.02	0.17	0.06	-.01	0.06	0.06	0.16	0.09	-.01	0.14	-.01	0.0
FYG	-.04	0.09	0.20	0.14	-.04	-.08	0.0	-.09	-.14	0.14	-.13	0.15	0.16	0.16	0.02	0.04	-.07	-.08
FOG	-.06	0.08	-.14	0.0	0.04	0.02	0.15	0.08	0.04	-.04	0.05	-.03	-.07	0.07	0.12	-.07	0.02	-.08
SYB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOB	-.08	-.20	-.34	-.16	-.13	0.10	0.23	0.21	0.02	-.06	-.03	-.08	-.06	-.02	0.05	0.06	-.12	0.07
SYG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

UNIPOLAR SCALE NO.111

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.09	-.26	-.55	-.19	0.07	0.11	0.38	0.39	0.08	-.20	0.05	-.02	0.02	-.09	-.05	0.06	0.12	-.08
FOB	-.15	0.0	-.34	-.13	-.03	0.02	0.18	0.17	0.08	-.04	0.05	0.03	0.22	0.11	0.03	0.06	0.07	-.10
FYG	-.05	0.06	-.22	-.11	0.04	0.04	0.03	0.13	-.01	0.05	0.10	-.03	0.17	0.11	0.02	0.04	0.09	-.10
FOG	-.09	-.08	-.23	-.12	0.06	0.11	0.24	0.25	0.01	-.20	0.08	-.02	0.04	0.0	-.07	0.04	0.03	-.09
SYB	0.10	0.07	-.08	-.20	-.10	-.23	-.07	0.27	0.18	0.31	0.10	0.0	0.17	0.10	-.04	0.16	0.15	0.24
SOB	0.08	0.04	-.25	-.23	-.02	-.23	0.08	0.19	0.20	0.20	0.18	0.01	0.15	0.0	0.01	0.04	0.04	0.21
SYG	0.0	0.0	-.21	-.16	-.16	-.05	0.11	0.18	0.09	0.09	0.19	-.13	0.01	-.12	0.05	-.02	0.09	-.05
SOG	0.02	0.05	-.34	-.08	-.11	0.06	0.10	0.05	-.10	-.05	0.15	0.13	0.21	0.10	-.03	0.07	0.0	-.11

UNIPOLAR SCALE NO.112 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.15	-.14	-.21	-.25	-.09	-.07	0.03	0.23	0.17	-.03	0.04	0.0	0.22	-.02	-.05	-.08	0.10	-.05
FOB	-.02	-.09	-.15	-.23	-.23	-.17	0.16	0.19	0.21	0.06	-.03	0.03	0.03	0.04	0.06	0.0	0.02	-.04
FYG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FOG	0.09	-.10	-.07	-.12	-.05	0.02	0.05	0.13	0.03	-.08	0.01	-.05	0.12	-.12	-.10	-.05	0.01	0.04
SYB	-.15	-.09	-.12	-.03	-.13	-.02	0.12	0.04	0.06	-.07	0.03	0.04	-.02	-.06	-.11	-.04	0.11	0.05
SOB	-.08	-.18	-.15	-.20	-.23	-.03	0.11	0.19	0.25	0.02	0.02	-.04	-.14	-.09	0.11	0.01	-.05	0.06
SYG	-.20	-.20	-.26	-.10	-.11	0.08	0.25	0.35	0.05	-.21	0.0	-.11	-.13	-.06	-.04	-.06	-.06	-.03
SOG	0.02	0.0	0.09	-.16	-.08	-.10	-.02	0.20	0.20	0.07	0.04	0.04	-.04	0.10	0.18	-.03	0.07	-.05

UNIPOLAR SCALE NO.113

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.09	-.22	-.16	-.21	-.25	-.18	0.10	0.36	0.40	0.05	0.05	-.04	0.0	0.03	-.03	0.02	-.01	-.05
FOB	0.04	-.27	0.05	-.11	-.29	-.21	0.03	0.44	0.42	0.01	0.01	0.12	0.13	-.02	0.08	-.01	0.01	-.14
FYG	0.10	-.11	0.01	0.16	-.30	-.29	-.05	0.19	0.38	0.14	0.07	0.09	0.23	0.16	-.03	0.21	-.02	0.19
FOG	-.11	-.07	0.0	0.09	-.15	-.18	-.04	0.20	0.39	0.0	0.08	0.18	0.06	0.13	-.03	0.12	0.16	0.08
SYB	-.09	-.18	-.01	-.22	-.31	-.14	0.07	0.29	0.32	0.04	0.15	0.11	-.02	-.07	-.02	-.01	0.19	0.08
SOB	-.07	-.22	-.14	-.11	-.19	-.10	0.06	0.21	0.34	0.0	-.06	-.14	-.07	-.07	-.03	-.01	0.03	0.13
SYG	-.16	-.23	-.11	-.27	-.42	-.24	0.08	0.35	0.49	0.04	-.06	-.12	0.03	-.03	-.14	0.04	-.04	0.11
SOG	0.07	-.02	-.17	-.23	-.25	-.09	0.03	0.26	0.28	0.02	-.10	-.08	0.06	0.0	0.09	0.02	-.03	0.08

UNIPOLAR SCALES

UNIPOLAR SCALE NO.114

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.06	-.04	-.15	-.14	-.10	-.10	-.06	0.11	0.0	0.07	0.23	0.26	0.12	0.03	0.04	0.28	0.16	0.22
FOB	0.10	0.22	0.07	-.07	0.12	-.11	-.13	-.04	-.12	0.10	0.31	0.28	0.01	0.09	0.05	0.31	0.20	0.17
FYG	0.17	0.14	0.10	0.03	-.10	-.04	-.24	-.16	-.06	0.21	0.23	0.20	0.18	0.02	0.09	0.40	0.17	0.29
FOG	0.04	0.10	0.21	-.03	-.11	-.21	-.16	-.06	-.05	0.12	0.07	0.41	0.24	0.25	-.03	0.32	0.12	0.19
SYB	0.09	0.18	0.11	-.04	-.07	-.18	-.22	0.08	-.16	0.20	0.26	0.33	0.12	0.08	0.09	0.26	0.18	0.25
SOB	0.10	0.10	0.01	-.02	0.09	-.12	-.08	-.06	-.23	0.05	0.36	0.27	0.12	0.09	0.13	0.17	0.01	0.05
SYG	-.03	-.05	-.08	-.06	-.10	-.12	-.02	0.21	0.16	0.08	0.17	0.06	0.16	0.11	-.05	0.16	0.09	0.04
SOG	0.20	0.11	-.14	-.17	-.17	-.35	-.16	0.15	-.04	0.13	0.07	0.09	0.07	-.04	-.02	0.36	0.17	0.27

UNIPOLAR SCALE NO.115

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.05	-.10	-.06	-.30	-.31	-.27	-.01	0.31	0.35	0.20	0.12	0.10	0.09	0.01	-.01	0.11	0.05	0.03
FOB	-.06	-.28	0.13	-.08	-.24	-.23	0.05	0.26	0.22	0.01	-.04	0.18	0.12	0.0	0.10	0.0	-.04	-.08
FYG	0.19	0.0	0.08	0.02	-.15	-.24	-.08	0.04	0.17	0.21	0.11	0.21	0.08	0.09	0.09	0.16	0.18	0.18
FOG	0.05	-.03	0.12	0.18	-.01	-.29	-.02	-.05	0.25	0.25	0.06	0.24	0.05	0.03	0.01	0.09	0.03	0.11
SYB	-.02	0.01	0.04	-.17	-.25	-.20	-.08	0.18	0.26	0.19	0.04	0.05	0.0	0.02	-.01	-.03	0.04	0.18
SOB	-.04	-.24	-.03	-.19	-.37	-.21	-.04	0.28	0.47	0.26	0.03	0.03	-.02	-.07	0.08	0.0	0.05	0.21
SYG	-.07	0.03	-.02	-.24	-.26	-.37	-.10	0.32	0.28	0.24	0.13	0.03	0.04	0.07	0.03	0.10	0.01	0.19
SOG	0.03	0.04	0.02	-.15	-.23	-.08	-.05	0.18	0.20	0.10	0.05	0.12	0.13	0.05	0.13	0.08	-.09	-.05

UNIPOLAR SCALE NO.116

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.08	-.07	-.09	-.01	0.07	0.13	0.11	0.13	0.03	-.11	-.11	0.05	-.06	0.05	-.03	-.07	-.02	-.12
FOB	-.11	-.10	-.01	0.09	0.03	-.12	0.03	0.16	0.16	-.24	0.09	0.14	-.01	0.06	-.03	-.05	-.05	0.02
FYG	0.06	-.13	-.16	-.06	-.01	-.08	0.02	0.18	-.03	-.11	0.15	0.11	0.11	0.05	0.04	[illegible]	0.04	0.09
FOG	-.16	-.24	-.03	-.07	-.13	-.10	0.07	0.24	0.08	-.13	0.17	0.06	0.13	-.01	0.05	0.0	0.09	-.08
SYB	-.10	0.04	-.06	0.04	0.05	0.06	0.07	0.03	-.11	-.21	0.06	0.02	0.15	-.06	0.02	0.03	0.05	-.04
SOB	0.01	0.08	0.01	0.03	0.04	0.02	-.08	-.03	-.06	-.06	0.05	-.05	0.05	-.02	0.05	-.07	-.12	0.16
SYG	-.06	0.04	-.11	0.04	-.01	-.02	-.08	0.06	0.02	-.01	0.0	0.04	0.02	0.08	-.01	0.03	-.05	0.04
SOG	0.08	0.0	0.01	0.01	0.0	-.03	-.10	0.01	0.04	-.01	-.06	-.06	0.04	0.04	-.04	0.10	0.07	-.12

UNIPOLAR SCALE NO.117

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.02	-.15	-.01	0.01	0.02	0.09	0.13	0.17	0.14	-.04	0.02	-.06	-.03	-.03	0.02	-.02	0.07	-.11
FOB	0.11	0.07	0.11	-.05	-.09	-.03	-.08	-.05	0.11	0.11	0.0	0.03	0.06	0.08	-.02	0.07	-.02	-.02
FYG	-.04	-.10	-.22	-.10	-.01	0.02	0.01	0.16	0.08	-.11	0.19	-.03	0.07	0.01	0.01	-.07	0.04	-.07
FOG	-.19	-.07	0.03	-.05	-.11	0.07	0.0	0.24	0.20	-.31	0.12	0.02	0.15	0.08	0.04	-.07	0.03	0.01
SYB	0.02	-.01	0.06	-.38	-.40	-.29	-.15	0.30	0.29	0.24	0.14	-.12	-.07	-.15	-.12	-.06	0.14	-.02
SOB	0.04	-.07	0.03	0.06	-.09	0.03	-.07	0.11	0.07	-.10	0.08	-.01	0.0	0.04	-.04	0.0	0.13	0.05
SYG	0.07	-.12	-.08	-.18	-.30	-.11	-.08	0.12	0.31	0.10	0.09	-.04	-.05	-.05	0.03	0.14	0.14	0.04
SOG	0.02	-.07	-.06	-.24	-.08	0.03	0.06	0.10	0.12	-.09	-.12	-.06	-.11	-.09	0.04	0.13	0.07	0.08

UNIPOLAR SCALES

UNIPOLAR SCALF NO.118

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.21	-.33	-.11	-.23	-.14	0.0	0.23	0.39	0.33	-.04	0.07	0.0	-.05	0.05	0.05	-.09	0.08	-.04
FOB	0.11	-.23	0.11	0.04	-.23	-.22	-.13	0.13	0.29	0.04	0.08	0.05	0.04	-.07	0.11	0.05	0.18	-.06
FYG	0.13	0.19	0.0	0.11	-.19	-.27	-.19	-.05	0.03	0.27	0.13	0.29	0.29	0.18	0.12	0.21	0.14	0.17
FOG	0.0	-.14	0.05	0.04	0.02	-.10	0.11	0.11	0.02	0.01	0.10	0.11	0.09	0.10	-.01	0.04	0.02	-.05
SYB	0.11	0.15	0.15	-.22	-.17	-.22	-.24	0.20	0.17	0.31	0.12	-.03	-.04	-.04	-.10	0.05	0.15	0.07
SOB	-.06	-.35	-.24	-.12	-.08	-.03	0.22	0.30	0.20	-.04	0.05	-.09	-.05	-.03	0.08	0.07	-.03	0.07
SYG	-.02	-.15	-.14	-.15	0.01	-.12	0.04	0.15	0.01	0.03	0.16	-.04	0.06	0.17	-.12	0.09	-.02	-.03
SOG	-.02	-.11	-.09	0.0	0.05	-.02	0.06	0.22	0.05	0.07	0.05	-.02	0.09	0.01	-.05	0.19	0.05	0.08

UNIPOLAR SCALE NO.119

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.07	-.12	-.02	-.35	-.48	-.39	-.11	0.31	0.55	0.30	-.04	-.04	-.12	-.01	-.14	-.01	0.03	0.03
FOB	0.12	-.02	0.06	-.07	-.31	-.06	-.03	0.18	0.30	0.06	-.05	0.01	0.02	-.11	0.03	0.07	0.01	-.13
FYG	0.08	0.06	0.16	0.18	-.38	-.23	-.17	0.02	0.14	0.18	0.03	0.22	0.15	0.13	-.01	0.17	-.09	0.25
FOG	0.08	0.04	0.16	-.05	-.24	-.17	-.13	0.04	0.20	0.23	0.05	0.11	-.01	-.01	0.05	0.11	0.22	0.21
SYB	0.15	0.15	-.07	-.29	-.19	-.17	-.03	-.04	0.20	0.16	0.02	-.09	-.01	-.12	0.11	0.01	0.11	0.0
SOB	-.03	-.18	-.24	-.23	-.48	-.03	0.01	0.25	0.37	0.08	-.06	-.12	-.10	-.09	0.03	-.09	-.01	0.17
SYG	0.03	-.02	0.11	-.08	-.43	-.22	-.07	0.15	0.30	0.16	-.05	0.02	0.02	-.08	-.01	0.08	0.02	0.17
SOG	0.06	0.04	-.02	-.10	-.20	-.10	-.02	0.20	0.28	-.04	-.08	0.02	-.01	-.02	0.03	-.02	0.01	-.04

UNIPOLAR SCALE NO.120

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.02	0.05	0.03	0.06	0.13	-.03	0.01	0.04	-.11	-.07	0.06	0.14	0.09	-.03	0.08	0.05	0.03	0.19
FOB	0.06	-.17	0.20	0.07	-.12	-.22	-.13	0.12	0.12	0.02	0.17	0.20	0.09	-.07	0.13	0.09	0.19	-.05
FYG	0.09	0.03	-.09	0.10	-.20	-.11	-.02	0.07	0.14	0.15	-.13	0.08	0.11	0.21	0.01	0.05	-.11	0.09
FOG	0.05	-.18	0.01	-.09	-.12	0.02	0.11	0.11	0.15	-.06	-.01	-.08	0.02	-.03	-.04	0.01	-.02	-.05
SYB	0.03	-.02	0.15	-.01	0.04	-.03	-.10	0.09	-.10	0.06	0.18	0.03	0.01	-.04	-.05	0.21	0.05	0.06
SOB	0.07	-.07	-.03	0.09	0.02	0.02	-.05	0.02	-.01	-.05	0.10	0.03	-.05	0.04	0.05	0.16	-.02	0.14
SYG	-.04	-.15	-.15	-.02	0.04	0.11	0.03	0.20	-.01	-.08	0.18	0.07	0.10	0.08	0.01	0.13	-.06	0.01
SOG	-.03	-.23	-.14	-.08	0.04	0.02	0.01	0.22	0.07	-.04	0.03	-.11	0.06	-.09	-.20	0.07	0.16	0.06

UNIPOLAR SCALE NO.121

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.10	-.11	-.25	-.04	0.05	0.0	0.08	0.08	0.07	-.05	0.10	-.04	0.03	0.04	0.02	-.06	-.05	0.02
FOB	-.09	-.25	-.14	-.19	-.12	-.03	0.12	0.34	0.25	0.02	-.04	-.03	0.10	-.01	0.12	-.02	0.04	-.02
FYG	-.05	-.14	-.19	-.06	0.08	0.07	0.08	0.17	-.01	-.13	0.11	0.0	-.01	0.0	0.04	-.11	-.08	-.02
FOG	0.02	-.10	-.02	0.09	-.09	-.10	0.02	0.01	0.10	0.09	0.15	0.14	0.06	0.03	-.03	-.01	0.10	-.05
SYB	0.06	-.10	-.01	0.13	0.19	0.02	0.0	0.12	-.11	-.04	0.12	0.01	0.03	-.02	-.03	0.07	0.05	0.08
SOB	-.07	-.16	-.21	-.01	-.14	-.03	0.10	0.22	0.07	-.03	0.09	0.05	0.01	0.01	0.03	0.07	-.08	0.04
SYG	-.06	0.06	-.15	0.14	0.14	-.03	0.03	0.01	-.12	-.05	0.06	0.13	0.12	0.18	0.09	0.07	-.13	-.09
SOG	-.12	-.24	-.25	-.07	0.0	0.05	0.06	0.26	0.03	-.17	0.06	0.04	0.11	0.02	-.18	0.11	-.06	0.03

UNIPOLAR SCALES

UNIPOLAR SCALE NO.122

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.0	0.11	0.04	-.01	0.05	0.10	-.03	0.05	0.02	0.0	0.08	-.03	-.02	-.09	-.10	0.0	-.01	-.07
FOB	0.03	-.24	0.21	0.10	-.18	-.07	-.10	0.05	0.19	-.10	0.03	0.03	0.05	-.09	0.06	-.07	0.08	-.11
FYG	0.09	0.0	0.04	0.0	0.13	0.02	-.07	-.01	-.01	0.03	0.22	0.05	0.11	-.19	-.01	-.04	0.02	-.02
FOG	0.10	0.01	0.03	-.13	-.08	0.0	-.11	-.06	0.08	0.12	0.18	-.07	-.14	-.01	0.10	-.02	0.09	0.10
SYB	0.02	-.01	-.12	-.12	-.13	-.12	-.01	0.07	0.12	0.08	0.13	-.01	-.01	0.10	-.03	0.02	-.06	-.06
SOB	0.01	-.01	0.01	0.03	0.04	0.02	0.02	0.02	-.02	-.06	-.07	-.02	-.06	-.02	-.06	-.07	0.07	0.07
SYG	0.04	0.0	-.01	-.11	-.07	-.11	-.11	0.11	0.06	0.0	-.01	0.02	-.05	0.06	0.03	0.24	0.03	0.11
SOG	0.07	0.0	-.05	-.05	-.04	0.04	-.01	0.11	-.01	-.11	0.03	-.05	-.14	-.03	-.01	0.05	-.04	0.07

UNIPOLAR SCALE NO.123 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.10	0.09	0.10	0.04	0.05	0.01	-.12	-.03	-.06	0.13	0.02	0.11	-.04	-.10	-.07	0.11	0.16	-.09
FOB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FYG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FOG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SYB	0.01	0.0	0.02	0.02	-.05	0.01	-.08	-.10	0.03	-.04	-.05	-.05	-.05	-.01	-.06	0.0	0.07	-.08
SOB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SYG	0.03	0.0	0.08	0.08	-.08	-.05	-.05	0.0	0.08	-.09	-.14	-.13	-.09	-.03	0.02	0.03	0.09	0.07
SOG	0.01	-.11	0.01	0.01	0.05	-.16	0.12	0.04	0.03	0.05	0.05	0.05	0.13	0.07	0.03	0.08	0.01	-.08

UNIPOLAR SCALE NO.124

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.19	0.03	0.01	-.21	-.37	-.41	-.19	0.19	0.40	0.34	0.12	0.07	0.03	0.03	-.10	0.21	0.16	0.07
FOB	0.12	0.02	0.17	-.19	-.25	-.28	-.23	0.19	0.30	0.23	0.16	0.22	0.09	-.08	0.13	0.12	0.20	0.03
FYG	0.25	0.16	0.12	0.07	-.29	-.23	-.28	0.0	0.25	0.32	0.10	0.22	0.15	0.09	0.12	0.25	0.15	0.22
FOG	0.10	0.10	0.30	0.03	-.20	-.27	-.19	-.01	0.18	0.27	0.05	0.26	0.17	-.06	0.01	0.19	0.23	0.28
SYB	0.0	-.01	0.05	-.26	-.23	-.27	-.10	0.27	0.30	0.22	0.17	0.02	0.01	-.06	0.05	0.06	0.13	0.17
SOB	-.08	-.27	-.17	-.22	-.23	-.14	0.08	0.19	0.25	0.16	0.06	0.01	-.14	-.06	0.08	-.01	-.07	0.11
SYG	-.01	0.03	-.01	-.16	-.41	-.40	-.11	0.17	0.46	0.28	0.14	-.15	0.13	0.0	-.02	0.07	0.08	0.11
SOG	0.11	-.07	-.12	-.18	-.26	-.27	-.05	0.28	0.24	0.20	0.10	-.14	0.09	-.08	-.02	0.05	0.14	0.12

UNIPOLAR SCALE NO.125

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.03	0.0	-.20	-.02	0.07	-.06	0.02	0.06	-.15	0.09	0.06	0.28	-.07	0.0	0.05	0.32	0.21	0.09
FOB	-.04	0.23	0.06	0.17	0.13	-.09	-.11	-.09	-.26	0.13	0.31	0.48	0.23	0.21	0.04	0.27	0.08	0.10
FYG	0.01	0.03	0.19	0.20	-.16	-.14	-.10	0.02	-.05	0.08	0.21	0.47	0.16	0.27	0.06	0.21	0.15	0.15
FOG	0.03	0.18	0.19	0.24	0.07	-.30	-.15	-.07	-.12	0.20	0.0	0.48	0.37	0.13	-.03	0.37	0.17	0.14
SYB	-.08	0.02	0.0	0.01	0.0	-.06	0.01	0.24	-.16	0.06	0.10	0.27	0.14	0.15	0.05	0.20	0.0	0.15
SOB	-.01	0.08	0.11	0.04	0.23	-.01	-.05	0.02	-.32	0.02	0.17	0.26	0.04	0.16	0.02	0.25	-.09	0.18
SYG	-.16	-.08	-.18	0.01	0.01	-.15	0.01	0.17	0.04	0.08	-.04	0.28	0.19	0.18	-.03	0.14	0.02	0.13
SOG	-.06	-.11	-.12	0.02	0.09	0.05	0.01	0.23	-.23	-.14	0.12	0.08	0.07	0.02	-.12	0.18	0.04	0.22

UNIPOLAR SCALES

UNIPOLAR SCALE NO.126

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.21	0.10	0.03	-.09	-.15	-.36	-.25	0.12	0.23	0.20	0.07	0.15	0.06	0.0	-.16	0.30	0.21	0.09
FOB	0.04	0.12	0.24	0.0	-.14	-.26	-.18	0.10	0.17	0.15	0.19	0.38	0.16	0.0	0.05	0.11	0.17	0.01
FYG	0.22	0.20	0.05	0.13	-.25	-.26	-.25	-.07	0.20	0.31	0.17	0.26	0.22	0.09	0.07	0.37	0.22	0.30
FOG	0.13	0.14	0.26	0.15	-.25	-.40	-.25	0.03	0.20	0.36	0.03	0.45	0.18	0.08	0.04	0.32	0.27	0.25
SYB	0.09	0.10	0.05	-.19	-.13	-.24	-.17	0.14	0.05	0.24	0.28	0.15	0.02	0.01	0.10	0.21	0.08	0.08
SOB	0.01	-.08	0.01	0.01	0.09	-.15	0.04	0.04	-.02	0.06	0.25	0.20	0.08	0.10	0.10	0.03	-.05	0.05
SYG	-.06	0.0	-.08	-.09	-.17	-.28	-.12	0.32	0.31	0.09	0.12	-.04	0.20	0.17	-.13	0.15	-.05	0.13
SOG	0.01	0.11	-.08	-.10	-.32	-.17	-.11	0.09	0.06	0.19	0.15	0.24	0.27	0.08	0.09	0.05	-.10	-.03

UNIPOLAR SCALE NO.127

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.07	0.01	0.02	-.18	-.27	-.32	-.19	0.10	0.29	0.27	-.03	0.03	0.0	0.0	-.11	0.10	0.13	0.13
FOB	0.14	-.08	0.13	-.03	-.18	-.13	-.15	0.09	0.29	0.05	0.08	0.12	0.08	-.05	0.06	0.08	0.13	0.04
FYG	0.08	0.11	0.02	-.01	-.28	-.20	-.12	-.02	0.25	0.21	0.08	0.07	0.05	0.0	0.02	0.19	0.07	0.16
FOG	0.13	-.02	0.04	0.06	-.10	-.19	-.09	0.01	0.20	0.19	-.03	0.15	-.09	0.08	-.09	0.16	0.09	0.16
SYB	-.03	-.03	0.10	-.32	-.41	-.33	-.13	0.24	0.32	0.28	0.22	0.07	-.01	-.11	-.03	0.01	0.21	0.0
SOB	-.07	-.30	-.12	-.18	-.23	-.13	0.01	0.27	0.36	0.10	0.0	-.14	-.06	-.10	0.01	-.05	-.04	0.09
SYG	-.04	-.02	0.08	-.05	-.26	-.30	-.17	0.22	0.41	0.27	0.11	0.01	0.13	0.10	-.02	0.03	-.03	0.12
SOG	0.14	-.08	-.13	-.24	-.18	-.24	-.04	0.35	0.24	0.16	0.03	0.03	-.03	-.01	0.05	0.06	0.08	0.14

BIPOLAR SCALES

BIPOLAR SCALE NO. 1 R

							P-W											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.50	-.59	-.66	-.13	0.07	0.32	0.87	0.53	0.04	-.54	-.10	-.26	-.07	-.14	-.01	-.30	-.19	-.32
FOB	-.46	-.54	-.60	-.28	0.01	0.28	0.87	0.47	0.18	-.47	-.32	-.44	-.13	-.14	-.11	-.31	-.23	-.22
FYG	-.59	-.69	-.63	-.36	0.10	0.38	0.91	0.64	0.0	-.57	-.23	-.35	-.13	-.08	-.22	-.42	-.25	-.41
FOG	-.52	-.57	-.59	-.25	-.06	0.40	0.86	0.59	0.09	-.52	-.19	-.34	-.16	-.10	-.18	-.38	-.33	-.26
SYB	-.59	-.66	-.59	-.11	0.01	0.24	0.86	0.30	0.09	-.54	-.18	-.20	-.08	-.03	-.03	-.35	-.26	-.24
SOB	-.32	-.46	-.65	-.26	-.02	0.29	0.85	0.46	0.02	-.47	-.10	-.18	-.14	-.07	0.08	-.08	-.12	-.19
SYG	-.47	-.53	-.62	-.36	0.0	0.17	0.87	0.39	0.01	-.49	-.13	-.31	-.02	-.08	-.04	-.29	-.26	-.27
SOG	-.46	-.53	-.60	-.25	0.04	0.17	0.86	0.38	0.04	-.44	0.11	-.06	0.05	-.04	-.13	-.32	-.16	-.37

BIPOLAR SCALE NO. 2 RS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.36	0.44	0.26	-.18	-.03	-.26	-.41	-.32	0.06	0.42	-.08	0.07	0.01	-.22	-.10	0.19	0.48	0.16
FOB	0.30	0.18	0.25	-.17	-.21	-.44	-.32	-.16	0.21	0.43	-.07	-.04	0.01	-.28	-.13	0.14	0.34	-.07
FYG	0.32	0.33	0.31	0.32	0.15	0.04	-.35	-.33	-.15	0.14	0.09	0.09	0.04	-.14	0.07	0.32	0.05	0.38
FOG	0.30	0.43	0.41	0.30	0.23	-.27	-.46	-.39	-.03	0.26	-.05	0.27	0.13	-.06	-.02	0.39	0.07	0.46
SYB	0.38	0.45	0.21	-.20	-.09	-.44	-.44	-.07	0.12	0.46	0.11	-.04	-.01	-.13	-.04	0.19	0.41	0.18
SOB	0.27	0.25	0.06	-.21	-.20	-.43	-.33	-.19	0.18	0.58	0.04	0.13	-.13	-.19	0.09	0.15	0.26	0.30
SYG	0.02	0.09	0.13	0.19	-.05	-.12	-.16	-.01	0.02	0.31	0.10	0.22	0.13	0.23	-.02	0.17	-.21	0.43
SOG	0.02	0.14	0.22	0.40	0.11	-.10	-.27	0.03	-.12	0.19	0.14	0.17	0.15	0.22	0.13	0.03	-.28	0.25

BIPOLAR SCALE NO. 3

									P-W									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.08	-.24	-.05	-.28	-.33	-.17	0.08	0.34	0.70	0.10	-.02	-.17	-.19	-.02	-.14	-.20	-.04	-.06
FOB	0.08	-.24	-.05	-.26	-.44	-.22	0.08	0.22	0.73	0.05	-.15	-.25	-.14	-.17	-.02	-.12	0.05	-.09
FYG	0.20	0.03	-.14	-.09	-.24	-.26	-.03	0.14	0.62	0.16	-.04	-.24	0.07	-.11	-.08	0.07	0.12	0.06
FOG	-.03	-.16	-.14	-.04	-.27	0.09	0.07	0.14	0.69	-.05	-.04	-.18	-.20	-.09	-.09	-.03	0.07	0.08
SYB	-.06	-.17	0.10	-.22	-.43	-.24	-.01	0.12	0.75	0.10	-.03	-.09	-.03	-.19	0.0	-.26	0.03	-.07
SOB	-.07	-.22	-.11	-.22	-.57	-.29	0.04	0.28	0.78	0.27	-.16	-.15	-.06	-.23	0.03	-.11	0.06	0.0
SYG	0.04	-.12	-.03	-.32	-.55	-.31	-.07	0.30	0.71	0.26	-.07	-.18	0.0	-.20	-.01	0.07	0.04	0.20
SOG	-.01	-.12	-.09	-.31	-.40	-.14	0.02	0.24	0.72	0.16	-.12	-.13	0.0	0.02	0.18	-.13	-.08	-.08

BIPOLAR SCALE NO. 5

							P-W											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.66	-.69	-.38	-.03	0.12	0.40	0.87	0.49	0.05	-.60	-.11	-.10	0.01	0.03	0.06	-.46	-.33	-.30
FOB	-.67	-.56	-.33	0.03	0.21	0.28	0.86	0.25	0.01	-.50	-.31	-.09	0.09	0.15	0.02	-.42	-.35	-.31
FYG	-.65	-.74	-.40	-.12	0.06	0.40	0.93	0.61	-.06	-.66	-.39	-.16	-.19	0.07	-.27	-.45	-.31	-.42
FOG	-.68	-.75	-.44	-.15	-.13	0.29	0.90	0.60	0.20	-.46	-.21	-.18	-.14	0.07	-.04	-.52	-.28	-.34
SYB	-.66	-.72	-.42	0.13	0.12	0.51	0.91	0.27	-.03	-.65	-.28	0.02	-.21	0.03	0.01	-.42	-.16	-.23
SOB	-.64	-.57	-.35	-.05	-.02	0.29	0.86	0.34	-.01	-.44	-.23	-.11	0.03	0.03	-.10	-.24	-.27	-.22
SYG	-.68	-.69	-.39	-.19	0.10	0.34	0.91	0.36	-.07	-.52	-.25	-.05	-.06	-.01	-.05	-.41	-.24	-.20
SOG	-.70	-.60	-.39	-.11	0.10	0.31	0.90	0.33	0.07	-.47	-.03	0.14	-.07	0.14	0.02	-.48	-.23	-.38

BIPOLAR SCALES

BIPOLAR SCALE NO. 6 R

								P-W										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.44	-.62	-.50	-.25	-.16	0.04	0.57	0.91	0.32	-.34	0.04	-.11	-.04	0.03	0.06	-.26	-.17	-.20
FOB	-.30	-.56	-.25	-.21	-.11	0.04	0.42	0.90	0.35	-.29	-.07	-.10	0.10	-.02	0.13	-.18	-.11	-.10
FYG	-.50	-.68	-.44	-.08	-.09	0.22	0.68	0.90	0.14	-.51	-.10	-.04	-.06	0.12	-.13	-.26	-.20	-.29
FOG	-.55	-.64	-.41	-.26	-.24	0.22	0.65	0.92	0.22	-.52	-.04	-.12	-.07	0.07	-.04	-.41	-.21	-.20
SYB	-.37	-.35	-.34	-.20	-.12	-.08	0.24	0.88	0.19	-.10	0.10	-.12	0.13	0.0	-.11	-.02	-.08	-.02
SOB	-.29	-.54	-.50	-.30	-.16	0.07	0.38	0.91	0.20	-.24	0.09	-.17	0.16	0.07	0.02	0.02	-.18	0.04
SYG	-.49	-.49	-.33	-.36	-.22	-.18	0.31	0.90	0.40	-.13	0.18	-.10	0.15	0.25	0.0	-.22	-.22	-.06
SOG	-.36	-.52	-.25	-.09	-.16	-.23	0.29	0.85	0.23	-.11	0.04	-.05	0.16	0.11	-.12	-.22	-.17	-.04

BIPOLAR SCALE NO. 7

									P-W									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.17	-.36	-.16	-.38	-.50	-.28	0.10	0.37	0.76	0.09	0.07	-.12	-.11	0.01	0.05	-.13	-.03	0.02
FOB	-.27	-.19	-.24	-.23	-.35	-.25	0.17	0.33	0.69	0.02	-.05	-.13	-.09	-.03	-.01	-.22	-.11	-.07
FYG	-.17	-.07	-.11	-.12	-.42	-.30	0.04	0.23	0.75	0.14	0.13	0.09	0.01	0.09	-.06	-.10	0.05	0.03
FOG	-.31	-.20	0.05	-.06	-.46	-.15	0.11	0.22	0.75	-.01	0.09	0.23	0.16	-.03	0.02	-.09	-.09	-.02
SYB	-.21	-.20	-.12	-.31	-.53	-.30	0.08	0.28	0.74	0.16	0.10	-.10	0.05	0.01	0.03	-.17	-.03	0.07
SOB	-.06	-.12	-.07	-.40	-.58	-.43	-.07	0.14	0.82	0.28	-.10	-.05	-.02	-.18	-.02	-.25	0.16	0.01
SYG	-.27	-.30	0.08	-.25	-.55	-.45	-.02	0.42	0.86	0.23	-.03	-.09	-.03	0.0	0.11	-.31	-.01	0.10
SOG	-.11	-.03	-.01	-.24	-.48	-.30	0.06	0.24	0.79	0.13	-.09	-.03	0.05	-.04	0.09	-.07	0.04	-.04

BIPOLAR SCALE NO. 9 R

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.56	0.55	0.36	-.08	-.13	-.41	-.68	-.44	0.01	0.54	0.04	0.09	0.03	-.01	-.07	0.30	0.42	0.27
FOB	0.48	0.55	0.49	0.14	-.10	-.30	-.75	-.45	-.06	0.52	0.31	0.32	0.14	0.0	0.05	0.32	0.30	0.26
FYG	0.61	0.71	0.54	0.34	-.15	-.48	-.80	-.66	0.12	0.68	0.24	0.24	0.18	-.03	0.15	0.41	0.30	0.40
FOG	0.54	0.55	0.51	0.37	0.09	-.41	-.68	-.57	-.08	0.59	0.29	0.34	0.11	0.15	0.17	0.34	0.40	0.20
SYB	0.61	0.59	0.54	-.05	-.13	-.44	-.71	-.33	0.10	0.66	0.23	0.09	0.03	-.04	0.09	0.23	0.32	0.20
SOB	0.30	0.54	0.61	0.17	-.08	-.37	-.73	-.44	0.06	0.52	0.20	0.28	0.01	0.04	0.06	0.07	0.18	0.28
SYG	0.49	0.52	0.52	0.26	-.10	-.17	-.69	-.36	-.02	0.53	0.10	0.20	0.07	0.0	-.05	0.35	0.35	0.23
SOG	0.44	0.50	0.60	0.42	-.03	-.22	-.68	-.34	-.09	0.46	-.02	0.08	-.09	0.04	0.12	0.31	0.19	0.34

BIPOLAR SCALE NO. 10

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.55	0.56	0.41	-.02	-.15	-.34	-.67	-.46	-.02	0.56	0.02	0.11	0.01	-.06	-.10	0.36	0.55	0.30
FOB	0.53	0.52	0.44	0.06	-.09	-.24	-.70	-.31	-.07	0.48	0.29	0.21	0.07	-.13	0.10	0.44	0.58	0.33
FYG	0.62	0.63	0.48	0.09	-.13	-.49	-.70	-.50	0.18	0.60	0.21	0.18	0.18	-.16	0.11	0.44	0.49	0.39
FOG	0.59	0.58	0.47	0.21	0.03	-.40	-.70	-.52	-.03	0.54	0.26	0.27	0.09	-.04	0.13	0.38	0.55	0.24
SYB	0.52	0.62	0.38	-.23	-.13	-.39	-.65	-.18	0.11	0.60	0.13	0.01	-.08	-.20	0.02	0.29	0.54	0.26
SOB	0.46	0.53	0.34	-.10	-.15	-.33	-.64	-.37	0.14	0.55	0.11	0.15	-.08	-.20	0.03	0.16	0.49	0.32
SYG	0.57	0.60	0.28	0.0	-.08	-.19	-.61	-.39	-.03	0.49	0.06	-.01	-.08	-.23	0.01	0.46	0.68	0.17
SOG	0.54	0.53	0.36	0.03	-.05	-.15	-.57	-.33	-.03	0.47	-.03	-.08	-.22	-.29	0.02	0.49	0.54	0.32

BIPOLAR SCALES

BIPOLAR SCALE NO. 11

								P-W										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.47	-.55	-.50	-.36	-.27	-.02	0.47	0.87	0.41	-.22	0.12	-.08	-.03	0.0	-.07	-.17	-.05	-.12
FOB	-.19	-.33	-.33	-.32	-.18	0.06	0.32	0.87	0.27	-.19	0.05	-.07	0.08	0.03	0.07	-.01	-.03	-.09
FYG	-.48	-.55	-.55	-.34	-.20	0.21	0.54	0.89	0.21	-.41	0.0	-.08	-.16	0.09	-.11	-.24	-.18	-.22
FOG	-.49	-.62	-.44	-.36	-.29	0.21	0.59	0.91	0.29	-.47	-.06	-.16	-.17	0.07	-.13	-.28	-.15	-.02
SYB	-.39	-.43	-.37	-.34	-.31	-.07	0.31	0.80	0.33	-.06	0.07	0.11	0.01	-.04	-.07	0.0	0.07	0.07
SOB	-.43	-.44	-.50	-.46	-.38	0.01	0.45	0.83	0.31	-.09	0.01	-.15	0.10	-.07	-.03	-.15	-.11	-.05
SYG	-.50	-.54	-.43	-.50	-.32	-.15	0.44	0.84	0.41	-.17	-.07	-.05	0.07	-.06	0.02	-.22	-.14	-.02
SOG	-.19	-.43	-.41	-.52	-.35	-.03	0.37	0.77	0.35	-.18	0.12	-.06	0.11	-.05	-.09	-.01	0.0	-.10

BIPOLAR SCALE NO. 14 R

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.41	-.48	-.58	-.11	0.08	0.39	0.58	0.49	-.01	-.52	0.13	-.27	-.08	-.13	0.05	-.24	-.25	-.19
FOB	-.16	-.30	-.46	-.24	0.06	0.42	0.47	0.54	0.07	-.37	0.06	-.20	0.01	-.03	-.08	0.10	-.06	-.05
FYG	-.30	-.37	-.43	-.31	0.24	0.49	0.45	0.42	-.22	-.53	0.09	-.19	-.26	0.05	-.04	-.17	-.22	-.27
FOG	-.40	-.53	-.52	-.43	-.16	0.48	0.54	0.59	0.11	-.67	-.13	-.33	-.20	0.01	-.11	-.25	-.11	-.19
SYB	-.31	-.46	-.46	-.12	0.13	0.24	0.47	0.33	-.08	-.43	0.02	-.08	0.05	-.12	-.08	-.01	-.10	-.10
SOB	-.17	-.32	-.44	-.18	0.08	0.24	0.45	0.49	-.04	-.40	0.08	-.25	0.10	0.0	-.02	0.20	-.06	-.08
SYG	-.11	-.22	-.43	-.26	0.20	0.17	0.37	0.26	-.18	-.50	0.11	-.28	-.08	-.02	-.06	-.07	-.20	-.22
SOG	-.23	-.39	-.36	-.33	0.07	0.21	0.42	0.27	-.02	-.44	0.11	-.14	0.08	-.08	-.13	0.0	-.03	-.22

BIPOLAR SCALE NO. 17 X

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	-.25	-.16	-.19	-.05	-.02	-.09	0.12	0.18	-.10	-.06	0.38	0.32	0.29	0.17	0.24	-.01	-.11	-.01
FOB	-.29	-.12	-.11	0.04	0.13	0.07	0.22	0.23	-.12	-.10	0.37	0.29	0.49	0.28	0.18	-.03	-.14	-.13
FYG	-.27	-.17	-.14	0.03	-.10	0.13	0.13	0.25	0.0	-.16	0.21	0.34	0.19	0.29	0.12	-.06	-.13	-.15
FOG	-.14	-.04	-.12	0.0	-.01	-.13	0.05	0.18	-.19	-.03	0.30	0.29	0.32	0.34	0.26	0.02	-.03	-.16
SYB	-.37	-.37	-.27	0.03	-.03	-.14	0.30	0.40	0.0	-.20	0.30	0.11	0.37	0.09	0.05	-.06	-.27	-.07
SOB	-.26	-.10	-.09	0.12	0.10	-.17	0.13	0.31	-.15	-.12	0.28	-.02	0.38	0.21	0.03	0.07	-.23	-.05
SYG	-.31	-.18	-.22	-.05	-.01	-.26	0.15	0.38	0.03	-.09	0.28	0.15	0.44	0.31	0.07	-.14	-.32	-.15
SOG	-.35	-.36	-.27	-.03	-.04	-.26	0.24	0.47	-.02	-.14	0.16	-.02	0.34	0.17	0.02	-.06	-.17	-.15

BIPOLAR SCALE NO. 18 R

									P-W									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)	(15)	(16)	(12)	(17)	(18)
FYB	0.02	-.10	-.08	-.42	-.56	-.41	-.08	0.18	0.77	0.31	0.0	-.11	-.04	-.10	0.01	-.03	0.27	0.06
FOB	-.01	-.15	-.04	-.37	-.61	-.44	-.02	0.21	0.77	0.23	-.10	-.04	-.05	-.08	-.01	-.06	0.05	-.07
FYG	0.06	0.08	-.07	-.12	-.35	-.40	-.09	0.03	0.75	0.34	-.07	0.0	0.05	0.04	-.02	-.10	0.17	0.08
FOG	-.25	-.26	-.08	-.19	-.33	-.08	0.20	0.22	0.62	-.02	-.11	-.07	-.13	-.11	0.01	-.13	-.03	0.0
SYB	-.02	-.07	-.17	-.46	-.40	-.29	0.0	0.29	0.80	0.25	0.0	-.20	-.05	-.06	-.02	-.18	0.16	-.03
SOB	-.04	-.30	-.19	-.38	-.52	-.31	0.01	0.25	0.82	0.08	-.21	-.18	-.11	-.13	-.12	-.26	0.23	0.0
SYG	-.23	-.28	-.02	-.19	-.54	-.36	0.01	0.36	0.75	0.05	-.05	-.06	-.07	0.04	0.01	-.29	-.08	-.07
SOG	-.04	-.19	-.09	-.26	-.46	-.39	0.06	0.32	0.75	0.06	-.27	-.23	0.05	0.06	-.05	-.06	0.04	0.01

BIPOLAR SCALES

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BIPOLAR SCALE NO. 19

      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
FYB  -.60  -.70  -.64  -.31  -.10  0.14  0.68  0.79  0.28  -.47  0.07  -.14  0.02  0.02  0.05  -.31  -.20  -.23
FOB  -.51  -.59  -.34  -.25  -.05  0.17  0.58  0.67  0.21  -.40  -.12  -.05  0.12  0.01  0.04  -.25  -.23  -.29
FYG  -.68  -.72  -.53  -.28  -.05  0.35  0.78  0.79  0.06  -.65  -.12  -.03  -.12  0.14  -.22  -.44  -.28  -.31
FOG  -.70  -.67  -.45  -.34  -.18  0.39  0.70  0.78  0.22  -.64  -.13  -.14  -.12  0.09  -.15  -.44  -.23  -.23
SYB  -.64  -.67  -.51  -.06  0.01  0.42  0.74  0.49  0.05  -.66  -.18  -.08  -.10  0.03  -.06  -.34  -.21  -.18
SOB  -.32  -.59  -.51  -.31  -.10  0.22  0.48  0.69  0.19  -.39  -.03  -.23  0.10  -.03  -.02  -.06  -.04  -.09
SYG  -.60  -.65  -.47  -.28  0.0   0.27  0.67  0.52  0.05  -.61  -.13  -.10  -.07  0.03  -.09  -.32  -.32  -.11
SOG  -.46  -.61  -.38  -.26  0.03  0.25  0.62  0.50  0.09  -.57  0.06  -.02  -.01  0.04  -.07  -.26  -.20  -.21


BIPOLAR SCALE NO. 20   X

      ( 1)  ( 2)  ( 3)  ( 4)  ( 5)  ( 6)  ( 7)  ( 8)  ( 9)  (10)  (11)  (13)  (14)  (15)  (16)  (12)  (17)  (18)
FYB  0.19  0.30  -.06  0.05  0.16  -.08  -.18  -.21  -.27  0.16  0.27  0.29  0.23  0.16  0.02  0.20  0.16  0.15
FOB  0.09  0.32  -.03  0.0   0.27  0.16  -.17  -.16  -.43  0.08  0.38  0.19  0.19  0.08  0.05  0.28  0.25  0.15
FYG  0.16  0.32  0.20  0.12  -.08  -.13  -.32  -.28  0.04  0.30  0.17  0.27  0.13  -.04  0.25  0.29  0.16  0.33
FOG  0.26  0.35  0.07  0.04  0.37  0.03  -.20  -.25  -.46  0.18  0.09  0.17  0.21  0.05  0.09  0.29  0.02  0.08
SYB  0.12  0.18  -.06  0.18  0.48  0.21  -.05  -.15  -.36  -.05  0.15  0.12  0.20  0.12  0.05  0.22  -.01  0.14
SOB  0.20  0.31  0.14  0.21  0.46  0.17  -.05  -.15  -.51  -.10  0.22  0.26  0.06  0.18  0.14  0.40  0.02  0.13
SYG  0.28  0.36  0.08  0.24  0.35  0.23  -.23  -.38  -.40  0.08  0.13  0.27  0.24  0.14  -.02  0.42  0.14  -.04
SOG  0.19  0.13  -.07  0.10  0.33  0.22  -.04  -.14  -.39  0.01  0.18  0.11  0.04  -.04  0.02  0.27  0.07  0.21
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APPENDIX H*

Adult and Child Component Correlations with the 18 Construct Measures Within Sex-Age-Period ($Fall_1$ X Spring) Subgroups

*Notes for Interpreting the Contents of Appendix H.

1. Numbers used to designate row headings correspond to the construct measures defined in Table 5 of the text.
2. Part-whole correlations are signified by an asterisk.

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: AFFILIATION-ADULT (11A)

CONSTRUCT	BOYS				GIRLS			
	YOUNGER		OLDER		YOUNGER		OLDER	
NO.	FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
(1)	0.18	0.28	0.13	0.30	0.28	0.27	0.20	0.09
(2)	0.34	0.25	0.32	0.26	0.36	0.28	0.26	0.10
(3)	0.14	0.15	0.24	0.14	0.20	0.16	0.20	0.03
(4)	0.06	-.15	0.08	0.10	0.12	0.18	0.12	0.11
(5)	0.04	-.06	0.0	0.09	-.01	0.03	-.09	0.11
(6)	-.12	-.41	-.21	-.22	-.05	-.14	-.33	0.01
(7)	-.30	-.35	-.44	-.25	-.45	-.35	-.35	-.08
(8)	-.10	0.03	-.06	0.01	-.19	-.06	-.21	0.05
(9)	-.01	0.05	-.05	-.10	-.02	-.02	0.03	-.18
(10)	0.21	0.45	0.32	0.33	0.20	0.34	0.33	0.12
(11)	0.84*	0.90*	0.88*	0.88*	0.88*	0.84*	0.88*	0.86*
(13)	0.29	0.30	0.38	0.30	0.34	0.29	0.30	0.18
(14)	0.24	0.17	0.31	0.35	0.18	0.27	0.26	0.23
(15)	0.15	0.09	0.16	0.24	0.06	0.24	0.07	0.09
(16)	0.15	0.14	0.18	0.30	0.38	0.23	0.36	0.28
(12)	0.18	0.21	0.29	0.12	0.29	0.24	0.09	-.06
(17)	0.04	-.03	0.12	0.03	0.18	0.10	0.27	-.10
(18)	0.07	0.16	0.12	0.06	0.12	0.14	-.12	-.04

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: INFORMATION SEEKING-ADULT (11B)

	BOYS				GIRLS			
CONSTRUCT	YOUNGER		OLDER		YOUNGER		OLDER	
NO.	FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
(1)	-.06	0.08	-.02	0.07	0.13	0.11	0.12	-.09
(2)	0.05	0.04	0.09	0.23	0.16	0.11	0.11	-.13
(3)	-.07	0.03	0.02	0.05	0.08	-.01	0.02	0.09
(4)	-.09	0.07	-.01	0.15	-.01	-.07	0.06	0.13
(5)	-.02	0.07	0.14	0.14	0.02	0.10	0.05	0.09
(6)	0.0	-.21	0.13	-.07	0.01	-.06	-.02	0.02
(7)	-.07	-.14	-.10	-.15	-.21	-.09	-.14	0.10
(8)	0.14	0.08	0.15	0.0	-.04	0.12	-.07	0.13
(9)	0.16	-.01	-.13	-.17	0.03	-.03	-.09	-.09
(10)	0.05	0.21	0.06	0.17	0.14	0.15	0.16	0.01
(11)	0.78*	0.69*	0.70*	0.73*	0.70*	0.79*	0.70*	0.71*
(13)	0.19	0.15	0.14	0.16	0.20	0.09	0.16	0.18
(14)	0.17	0.32	0.23	0.27	0.13	0.24	0.33	0.34
(15)	0.13	0.20	0.24	0.21	0.09	0.23	0.14	0.14
(16)	0.21	0.25	0.30	0.15	0.12	0.14	0.25	0.05
(12)	0.01	0.04	0.07	0.06	0.12	-.04	0.01	-.21
(17)	-.09	-.22	-.03	-.11	0.10	-.07	0.22	-.18
(18)	0.0	-.08	-.03	0.05	0.08	-.11	-.19	-.18

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: ATTACHMENT-ADULT (11C)

CONSTRUCT	BOYS				GIRLS			
	YOUNGER		OLDER		YOUNGER		OLDER	
NO.	FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
(1)	-.07	0.08	0.01	0.10	0.06	0.09	0.07	-.12
(2)	-.09	0.06	0.09	0.18	0.04	0.13	0.02	-.14
(3)	-.19	-.07	-.11	-.04	-.12	-.10	-.02	-.10
(4)	-.04	-.19	-.01	0.04	-.27	-.12	-.14	-.06
(5)	0.05	-.08	0.01	0.24	0.03	0.0	-.10	0.07
(6)	0.14	-.28	-.06	-.03	0.06	-.16	-.03	0.05
(7)	0.13	-.13	-.09	-.03	-.06	-.08	-.04	0.19
(8)	0.20	0.10	-.07	0.04	0.07	0.20	0.07	0.16
(9)	-.10	0.13	-.07	-.20	-.03	0.02	-.06	-.23
(10)	-.16	0.30	0.05	0.11	-.04	0.11	0.07	-.10
(11)	0.47*	0.54*	0.38*	0.61*	0.51*	0.65*	0.52*	0.56*
(13)	0.05	-.12	0.11	0.14	0.03	-.08	0.20	0.03
(14)	0.09	0.09	0.05	0.28	0.20	0.20	0.06	0.20
(15)	0.07	0.0	0.18	0.22	-.09	0.18	0.03	-.05
(16)	0.05	0.11	-.08	0.16	0.08	0.10	0.14	0.05
(12)	-.07	-.11	-.06	-.01	0.0	-.03	0.0	-.09
(17)	-.10	0.0	0.06	-.16	0.22	0.02	0.16	-.01
(18)	-.07	-.10	0.07	0.03	-.07	-.09	-.11	-.10

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: RECOGNITION SEEKING-ADULT (11D)

CONSTRUCT NO.	BOYS YOUNGER FALL	BOYS YOUNGER SPRING	BOYS OLDER FALL	BOYS OLDER SPRING	GIRLS YOUNGER FALL	GIRLS YOUNGER SPRING	GIRLS OLDER FALL	GIRLS OLDER SPRING
(1)	-.01	0.03	0.01	0.14	-.04	-.06	0.02	-.02
(2)	0.05	0.07	0.13	0.10	-.04	-.02	0.10	0.10
(3)	0.02	0.03	0.17	0.06	-.02	0.20	0.18	0.19
(4)	0.12	0.05	0.30	0.13	0.07	0.12	0.13	0.11
(5)	-.04	0.03	0.22	0.03	0.08	0.03	-.13	0.10
(6)	-.03	0.01	0.18	-.07	0.12	-.07	-.02	0.17
(7)	-.05	-.04	-.18	-.12	-.08	-.08	-.16	0.0
(8)	-.01	-.06	-.09	-.05	0.02	0.02	-.02	-.18
(9)	0.0	-.09	-.17	-.03	-.12	0.01	0.03	-.08
(10)	0.01	0.01	-.05	0.08	-.07	0.08	0.08	0.07
(11)	0.50*	0.36*	0.50*	0.52*	0.51*	0.42*	0.56*	0.41*
(13)	0.23	0.33	0.28	0.24	0.03	0.25	0.28	0.22
(14)	0.04	0.17	0.25	0.24	0.17	-.02	0.27	0.09
(15)	0.18	0.11	0.28	0.20	0.16	0.07	0.17	0.08
(16)	0.16	0.26	0.08	0.04	0.23	0.16	-.04	0.34
(12)	0.06	-.03	0.05	0.05	0.08	-.09	-.03	0.06
(17)	-.16	-.03	-.18	0.0	-.12	-.10	0.16	0.0
(18)	-.05	-.09	-.04	-.16	-.03	-.17	-.11	-.13

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: SOCIAL CONTROL-ADULT (11E)

CONSTRUCT	BOYS				GIRLS			
	YOUNGER		OLDER		YOUNGER		OLDER	
NO.	FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
(1)	0.12	0.17	0.10	0.12	0.03	0.16	0.0	0.09
(2)	0.14	0.21	0.17	-.07	0.13	0.16	-.04	0.12
(3)	0.05	-.08	0.01	-.26	-.14	-.04	0.11	0.01
(4)	-.25	-.23	-.38	-.41	-.18	-.21	0.02	-.15
(5)	-.33	-.27	-.37	-.44	-.34	-.31	-.22	-.41
(6)	-.27	-.36	-.41	-.27	-.13	-.38	-.12	-.31
(7)	-.12	-.24	-.13	0.0	-.13	-.18	-.02	-.06
(8)	0.13	0.08	0.11	0.35	0.15	0.18	-.03	0.17
(9)	0.27	0.02	0.36	0.34	0.40	0.28	0.01	0.30
(10)	0.38	0.38	0.39	0.38	0.12	0.36	0.0	0.29
(11)	0.34	0.36	0.27	0.28	0.30	0.30	0.11	0.25
(13)	0.16	-.04	0.16	0.04	0.11	-.06	0.05	0.03
(14)	-.02	0.02	-.04	0.06	0.03	0.12	0.14	0.25
(15)	-.08	-.07	0.02	-.03	0.06	0.04	0.0	0.07
(16)	0.09	0.05	0.05	0.27	0.18	0.14	0.04	0.20
(12)	0.17	0.09	0.12	-.01	0.02	0.09	-.05	-.06
(17)	0.12	0.13	0.16	0.05	0.16	0.20	0.03	-.01
(18)	0.13	0.01	0.04	0.12	-.11	-.01	-.06	-.06

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: AFFILIATION-CHILD (12A)

CONSTRUCT	BOYS				GIRLS			
	YOUNGER		OLDER		YOUNGER		OLDER	
NO.	FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
(1)	0.59	0.47	0.57	0.48	0.63	0.60	0.67	0.62
(2)	0.52	0.38	0.48	0.23	0.57	0.38	0.54	0.32
(3)	0.33	0.19	0.19	0.14	0.44	0.12	0.31	0.21
(4)	0.10	0.10	-.12	-.02	0.26	0.04	0.16	0.03
(5)	-.04	0.16	-.18	0.04	0.02	-.01	0.09	-.06
(6)	-.29	-.13	-.20	-.20	-.31	-.24	-.32	-.26
(7)	-.62	-.45	-.55	-.27	-.61	-.48	-.63	-.52
(8)	-.37	-.20	-.19	-.03	-.46	-.31	-.48	-.18
(9)	-.11	-.21	-.02	-.10	-.05	-.15	-.13	-.14
(10)	0.44	0.23	0.41	0.28	0.48	0.36	0.50	0.27
(11)	0.13	0.05	0.22	0.22	0.18	0.11	0.16	-.13
(13)	0.24	0.14	0.09	0.21	0.19	0.09	0.24	-.06
(14)	0.12	0.13	0.08	-.02	0.20	0.11	0.06	-.01
(15)	-.02	0.04	-.12	-.11	-.07	-.08	-.03	-.10
(16)	-.04	-.05	0.0	0.06	0.18	-.03	-.04	-.04
(12)	0.79*	0.75*	0.80*	0.75*	0.86*	0.78*	0.83*	0.77*
(17)	0.38	0.16	0.46	0.20	0.35	0.39	0.37	0.28
(18)	0.35	0.36	0.39	0.26	0.45	0.18	0.41	0.42

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: INFORMATION SEEKING-CHILD (12B)

CONSTRUCT NO.	BOYS				GIRLS			
	YOUNGER		OLDER		YOUNGER		OLDER	
	FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
(1)	0.17	0.14	0.18	0.16	0.36	0.22	0.16	0.34
(2)	0.12	0.03	0.08	0.14	0.17	0.18	0.23	0.24
(3)	0.08	0.09	0.10	0.12	0.20	0.01	0.19	0.13
(4)	0.07	0.01	0.02	0.09	0.14	0.0	0.11	-.09
(5)	0.0	-.09	0.10	0.15	-.09	0.0	0.10	-.12
(6)	-.06	-.04	0.17	-.14	-.17	-.12	-.20	-.12
(7)	-.14	-.08	0.0	-.06	-.23	-.16	-.24	-.25
(8)	-.07	0.05	0.02	-.04	-.10	-.10	-.12	-.03
(9)	-.09	0.01	-.23	-.03	0.10	-.10	-.09	0.11
(10)	0.09	0.18	-.03	0.12	0.32	0.18	0.20	0.20
(11)	0.04	0.10	0.05	0.20	0.12	-.01	-.01	0.03
(13)	0.19	0.13	0.13	0.08	0.17	0.12	0.31	0.12
(14)	0.03	0.02	0.05	0.05	0.09	0.09	0.13	0.17
(15)	0.15	0.05	0.10	0.11	-.03	0.09	0.09	0.14
(16)	0.03	-.03	-.04	0.04	0.03	-.06	0.05	-.05
(12)	0.51*	0.41*	0.51*	0.48*	0.66*	0.62*	0.59*	0.47*
(17)	0.01	0.11	-.01	-.08	0.16	0.02	0.11	0.06
(18)	0.10	0.04	0.11	0.23	0.32	0.17	0.27	0.01

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: ATTACHMENT-CHILD (12C)

CONSTRUCT NO.	BOYS				GIRLS			
	YOUNGER		OLDER		YOUNGER		OLDER	
	FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
(1)	0.20	0.25	0.29	0.21	0.22	0.29	0.23	0.27
(2)	0.09	0.23	0.19	0.07	0.23	0.24	0.24	0.17
(3)	-.14	-.02	-.09	-.03	0.0	-.14	0.25	0.03
(4)	-.07	-.17	-.05	-.02	-.02	-.11	0.03	-.18
(5)	0.09	0.07	0.06	0.18	-.21	0.15	0.13	0.11
(6)	0.02	-.13	0.10	0.04	-.08	0.15	-.11	0.04
(7)	-.05	-.25	-.14	0.02	-.16	-.15	-.30	-.20
(8)	-.04	0.10	0.01	0.02	0.0	-.06	-.20	-.10
(9)	-.10	-.17	-.20	-.18	-.02	-.18	-.01	-.12
(10)	0.04	0.23	0.11	0.01	0.07	0.07	0.12	0.10
(11)	0.02	0.10	0.13	-.11	0.16	0.04	-.07	-.10
(13)	0.06	-.07	0.09	0.04	0.14	-.01	0.33	-.13
(14)	0.06	0.03	-.03	-.10	-.01	0.10	0.22	-.05
(15)	-.13	-.15	0.03	-.08	0.06	-.07	0.09	-.21
(16)	-.04	-.17	0.01	0.10	0.07	-.13	-.07	-.01
(12)	0.59*	0.73*	0.64*	0.70*	0.56*	0.72*	0.70*	0.72*
(17)	0.34	0.23	0.34	-.04	0.16	0.25	0.06	0.39
(18)	0.12	0.23	0.34	0.20	0.17	0.13	0.38	0.23

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: RECOGNITION SEEKING-CHILD (12D)

CONSTRUCT NO.	BOYS YOUNGER FALL	BOYS YOUNGER SPRING	BOYS OLDER FALL	BOYS OLDER SPRING	GIRLS YOUNGER FALL	GIRLS YOUNGER SPRING	GIRLS OLDER FALL	GIRLS OLDER SPRING
(1)	0.14	0.19	0.05	0.16	0.10	0.07	0.12	0.02
(2)	0.20	0.20	0.04	0.23	0.09	0.08	0.03	-.08
(3)	0.14	0.15	0.16	0.18	0.08	0.07	-.04	0.02
(4)	0.18	0.19	0.25	0.20	0.15	0.05	0.08	-.05
(5)	0.02	0.12	0.05	0.15	-.20	-.06	-.04	-.03
(6)	-.01	0.09	-.03	0.14	-.06	-.05	-.04	0.04
(7)	-.11	-.15	-.09	-.21	-.09	-.07	-.03	0.03
(8)	-.04	-.15	0.02	-.17	0.0	-.04	-.10	-.02
(9)	-.08	-.23	0.02	-.18	-.06	-.02	-.10	0.12
(10)	0.10	0.01	0.04	0.14	0.17	0.01	0.06	0.05
(11)	0.06	0.04	-.03	0.06	0.17	0.09	0.04	-.07
(13)	0.24	0.12	0.07	0.15	0.15	-.03	0.08	0.01
(14)	0.02	-.04	0.07	0.03	0.11	-.13	0.09	-.06
(15)	0.17	0.16	-.07	0.12	0.08	0.01	0.13	0.01
(16)	-.05	0.10	0.29	-.10	0.28	0.09	0.05	0.0
(12)	0.37*	0.26*	0.21*	0.31*	0.26*	0.17*	0.27*	0.24*
(17)	0.01	0.06	-.20	0.05	-.12	0.07	0.09	0.19
(18)	0.0	0.03	0.15	0.03	0.12	-.11	0.07	0.0

CORRELATIONS OF 18 CONSTRUCTS WITH COMPONENT: SOCIAL CONTROL-CHILD (12E)

CONSTRUCT NO.	BOYS YOUNGER FALL	BOYS YOUNGER SPRING	BOYS OLDER FALL	BOYS OLDER SPRING	GIRLS YOUNGER FALL	GIRLS YOUNGER SPRING	GIRLS OLDER FALL	GIRLS OLDER SPRING
(1)	0.26	0.10	0.30	0.19	0.44	0.25	0.26	0.30
(2)	0.18	0.16	0.21	0.09	0.29	0.18	0.22	0.16
(3)	0.09	0.09	0.21	-.02	0.28	0.12	0.33	-.04
(4)	-.25	-.22	-.12	-.28	0.19	-.12	0.21	-.22
(5)	-.32	-.35	-.31	-.22	-.40	-.26	-.13	-.33
(6)	-.53	-.43	-.55	-.33	-.49	-.42	-.44	-.40
(7)	-.36	-.27	-.28	-.13	-.36	-.37	-.30	-.28
(8)	-.03	0.31	0.02	0.05	-.08	-.01	-.13	0.12
(9)	0.27	0.31	0.28	0.19	0.35	0.24	0.13	0.17
(10)	0.47	0.38	0.49	0.40	0.48	0.46	0.46	0.42
(11)	0.03	0.30	-.03	0.09	0.06	0.13	0.06	-.09
(13)	0.20	0.18	0.13	0.15	0.29	0.16	0.40	-.05
(14)	0.04	0.11	-.03	0.01	0.05	0.10	0.11	-.08
(15)	-.14	-.01	-.11	-.25	0.0	-.05	-.07	-.19
(16)	-.16	0.07	0.02	0.02	0.04	-.07	-.04	-.03
(12)	0.37	0.31	0.31	0.30	0.45	0.33	0.52	0.50
(17)	0.29	0.13	0.28	0.10	0.34	0.24	0.17	0.27
(18)	0.35	0.32	0.20	0.36	0.42	0.33	0.35	0.45